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NEWS SUMMARY

GENERAL

Bonn
invites
Reagan
to speak

President Reagan has been invited to address the Bundestag, the lower house of West Germany's parliament, when he visits Bonn in June. He would be the first U.S. president to do so.

The news followed a report in the *West am Sonntag* newspaper that Reagan had been invited and was eager to accept.

Fraser pressure

Australian Premier Malcolm Fraser called a Liberal meeting for Thursday to discuss party leadership following a heavy defeat in Victoria's state election. Page 3

Diplomat killed

French police said they had no clues to the identity of the woman who shot dead an Israeli diplomat in Paris on Saturday. Two Lebanese groups claim responsibility.

Gaddafi visit

Libyan leader Muammar Gaddafi may visit Greece this month, according to the Athens daily *Kathimerini*.

Training talks

Employers and union leaders will try to reach agreement this week on a plan to provide all 16-year-olds with a year's programme of training, work experience and further education. Back Page

Police probe

Scotland Yard said the Observer's claim that an inquiry is to be launched into alleged London police corruption was "speculative".

Women picket

Women picketed a women's clubs' conference in Blackpool as part of a three-year battle to achieve equal rights.

Trident protest

About 5,000 people are expected to march through Glasgow next Saturday in protest against the Trident missile.

Cargo ship sinks

Seven crew were killed and three others were missing after a Moroccan cargo ship sank off Vigo, Spain.

Swiss spy claim

Switzerland has protested to the Soviet Embassy in Bern about espionage activities by two of its staff who have since left the country.

Pot-holes found

Two men were rescued from a pothole in Bonsall Moor near Matlock, Derbyshire after being lost for 24 hours.

Chay returns

The first British yacht to finish the Whitbread round the world race was United Friend, skippered by Chay Blyth. It came sixth, almost a week behind the Dutch winner Flyer.

Driver run over

A Coventry van driver was killed by his own vehicle which apparently rolled over him shortly after being parked.

Gut reaction

A New York man weighing 57 stone had 147 lbs of fat removed from his stomach by surgery. A special operating table had to be built.

Briefly...

About 10,000 marched through Glasgow to protest against the Pope's planned visit. Poland's curfew will be lifted for three days over Easter. Edward Heath arrived in China for a seven day visit.

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- Marines destroy helicopter
- Argentine corvette damaged
- Islanders face military rule
- Reinforcements pour in
- Diplomatic moves continue
- No Cabinet changes imminent



Mario Menéndez, Argentinian-appointed governor of the Falkland Islands, in Buenos Aires yesterday. Troop carriers outside the Falkland Island Company offices in Port Stanley show the strength of the invading forces

Tory whips seek to prevent revolt over Falkland Islands

BY PETER RIDDELL, POLITICAL EDITOR

SENIOR MINISTERS have carious in face of widespread private criticism by Tory MPs and several public demands for their resignation.

However, the word in Whitehall is that no Ministers have offered to resign and no Cabinet changes are imminent.

Mr Nott said on ITV's *Weekend* that he would "unhesitatingly" resign if he lost the confidence of Cabinet and parliamentary colleagues and the Prime Minister. "But for me to quit my post at this moment would be very damaging indeed for the Government."

It is clear, however, that if either the operation to re-take the Falklands fails or there is

what is regarded by MPs as a "sell-out" to Argentina then the pressures for the departure of Mr Nott and Lord Carrington will become irresistible.

Tory whips were yesterday talking to all back-benchers in an attempt to cool tempers after Saturday's heated and embittered Commons debate. Intense activity is likely in the next two days to avoid a significant back-bench rebellion after the full-scale debate scheduled for Wednesday.

The political future of both Lord Carrington, the Foreign Secretary, and Mr John Nott, the Defence Secretary, remains pre-

dictive with Suez in 1956, when Labour under Hugh Gaitskell initially took a very strong line but then attacked the Eden Government.

Mr John Sjödin, the Labour Defence spokesman, said in the debate, however, that Labour would not offer a "blank cheque". The Shadow Cabinet, which is due to meet today, is likely to offer only qualified support.

There are differences be-

tween the strong line supported

by Mr Peter Shore and the in-

distinctly less bellicose attitude of Mr Michael Foot, who scored a much-needed personal success with a highly effective speech on Saturday.

Having failed to anticipate the invasion, the Government's internal party problem is that many Tory MPs now feel

national honour and party

credibility can be restored only

by re-taking the islands. Nothing less would be acceptable to them.

Whatever the outcome, there

will also be strong pressure for

a review of defence strategy, in

particular the run-down of some

of the surface fleet.

One whip reported after talking

to MPs yesterday that while

they had been a "steading

since Saturday, the party was

still a long way from being

in a position where anyone

could talk "reality" about the

long-term position of the

Falklands.

Continued on Back Page

City concerned over block on assets

BY WILLIAM HALL AND GARETH GRIFFITHS

The British Government's decision to block Argentine assets held in the UK and suspend official insurance cover on exports to Argentina will severely disrupt UK trade with the area and present major problems for international banks operating in London.

It is the first time the UK Government has taken action to block another country's assets in London, since Rhodesia declared *UDI* in November 1965, and several bankers expressed concern yes-

terday that the move would

damage the City's reputation as a neutral international financial centre.

The Government issued a statutory order, the Control of Gold, Securities, Payments and Credit (Argentine Republic) Directions 1982, on Saturday, which immediately took effect.

The order, made under the Emergency Laws (Re-enactments and Repeals) Act 1964, prohibits banks from making payments or transferring funds on the instructions of either

the Argentine Government or Argentine residents.

Bank of England will issue notices clarifying details later this week.

Bankers' immediate concerns centre on the impact of the move on their correspondent banking relationships with Argentinean banks, international loans to Argentina and foreign exchange and money market dealings.

Treasury officials said yesterday that the move was not designed to halt all trade with

Argentina but it is clear that it will make the problems of both importers and exporters considerably more difficult.

There were widely differing views in London yesterday about the effect of the move on Argentina's ability to tap the international capital markets. London-based banks have loaned Argentina \$3.5bn while Argentina only has \$1.4bn on deposit with London banks.

Some bankers said that Argentina would just borrow in

Continued on Back Page

Reagan refuses to defer tax cuts

BY REGINALD DALE, U.S. EDITOR IN WASHINGTON

PRESIDENT Reagan has again ruled out any deferral of his tax-cutting programme despite soaring budget deficits, and has rejected quick solutions to America's economic problems.

Mr Reagan, who is struggling to recapture the political initiative in the face of mounting opposition to his budgetary and economic policies, launched a new series of five-minute radio broadcasts at the weekend.

They are intended to take his message directly to the American people without having it filtered through or truncated by reporters and editors.

Mr Reagan's quick-talking programme came after the New York Times had reported that his administration believed that his 1983 budget deficit would be \$124bn (almost £70bn) against the initial February estimate of \$91.5bn— even if his controversial budget is adopted in its entirety.

While Mr Reagan declined to comment on the report, the Office of Management and Budget said that updated budget

estimates due at the end of this week would include "some technical revisions which might increase the deficit slightly," but not on that scale.

Mr Reagan said that interest rates were breaking all the rules of the game by refusing to fall, and should come down significantly. "To do this, a signal must be sent that while the political process always requires some compromise, government this time intends to stay the course," he said.

He said that the broadcasts reminded him of his earlier work as a radio sports commentator, when he earned \$5 game broadcasting Iowa university football games nearly 50 years ago. Mr Reagan tacitly conceded that his economic recovery programme had been slow to take effect. It would only really start with the 10 per cent tax cut due on July 1, he said.

Last autumn, when his first 5 per cent tax cut took effect, as the starting date for recovery,

Mr Jim Wright, the House

Democrat leader, urged the

President in an official response,

to reconsider his "one-sided"

tax cuts.

"I renew the call for some

flexibility, a little less rigidity,

a willingness on the part of the

President to recognise the harsh

realities of suffering among

THE FALKLAND ISLANDS INVASION

Export cover suspension will hit UK trade

BY PAUL CHEERSHIRE, WORLD TRADE EDITOR

NEW BRITISH business with demand because of deteriorating Argentina will be severely hit by commercial conditions. Such restricted, following the Government's decision to suspend export insurance cover on goods destined for that country.

The decision, made as part of a package of economic constraints to put pressure on Argentina, was described yesterday by the Export Credits Guarantee Department (ECGD) as a "precautionary measure."

The cover can be resumed whenever the Government thinks fit, and therefore, is different from an independent decision by the ECGD to refuse exporters the insurance they

are offered to Argentina over the six months and five years.

Existing contracts, already covered by ECGD, are not affected, however. About 80 per cent of British exports to Argentina, running at £172.8m in 1980, are backed by the ECGD. This is double the worldwide average.

Most new business in Argentina has in recent years been generated through the provision of general purpose lines of credit provided by the commercial banks but supported by

the rates of interest have been

10.5 per cent on credits of up to five years. The Government is to decide whether to continue cover on the unused portion of any outstanding credit lines. Some £40m has been offered to Argentina over the

Total ECGD exposure in Argentina is less than £300m, indicating that, as a trading partner, Argentina has been of marginal importance. By contrast, its exposure in Poland is nearly £1bn and in Romania £405m. But, especially over the last two years, there has been a greater effort on the part of both Government and exporters to expand sales and win a larger share of the imports market linked to Argentina's development plans.

The menace for the Department is that in the wake of the suspension of cover, Argentine buyers may feel emboldened not to honour existing obligations, further straining its already tight financial position.

Bank to explain details of freeze

By William Hall

BANK OF ENGLAND officials were working over the weekend in order to be able to respond sensibly today to inquiries from banks and traders about the impact of the Government's decision to freeze Argentinian assets. Following the abolition of UK exchange control in October 1979, the Bank has dismantled its facilities for dealing with inquiries, but is expecting to deal with the current situation by issuing notices giving further details within a few days.

The Government implemented its decision to freeze Argentinian assets in Britain by laying a statutory instrument, the Control of Gold, Securities, Payments and Credits (Argentine Republic) Directions 1982, before Parliament last Saturday. It took effect immediately.

The preamble to the instrument says that "the Treasury are satisfied that action to the detriment of the economic position of the UK is being taken or is likely to be taken by the Government of or persons resident in the Argentine Republic" and is issuing directions under section 2 of the Emergency Laws (Re-enactments and Repeals) Act 1964. The directions prohibit (except with Treasury permission) any recipient in the UK, the Channel Isles or the Isle of Man of an order from the Government of or any person resident in the Argentine Republic from carrying out that order in so far as the order requires the recipient to make any payment or to part with any gold or securities or requires any change to be made in the persons to whose credit any sum is to stand or to whose order any gold or securities is to be held.

Government officials were anxious to play down the effects the measures would have on London's standing as a neutral international financial centre. They stressed that they were not confiscating Argentinian assets, as ownership would remain with Argentinian residents.

Flag airlines curtail their services

By Michael Donnelly, Aerospace Correspondent

THE TWO flag airlines flying between Britain and Argentina, British Caledonian and Aerolineas Argentinas, are keeping bookings at a standstill while London and with envy "as D. Amerika" as D. British Caledonian is by-passing Argentines' long-haul flights from Buenos Aires to Europe but is terminating its flights at Madrid, instead of coming on to London.

TASK FORCE PUTS TO SEA TODAY

BY BRIDGET BLOOM, DEFENCE CORRESPONDENT

Naval blockade is likely first action

Merchant ships warned

BY JOHN NOTT, THE DEFENCE SECRETARY, YESTERDAY REAFFIRMED THAT BRITAIN'S POLITICAL OBJECTIVE IN THE FALKLANDS WAS TO REESTABLISH BRITISH ADMINISTRATION THERE, IF NECESSARY BY FORCE. "A VERY LARGE NAVAL TASK FORCE" WILL BE ON ITS WAY TO THE SOUTH ATLANTIC, HE SAID.

ORDERS TO THE TASK FORCE TO ENGAGE ARGENTINE FORCES HAVE NOT YET BEEN GIVEN. IF AND WHEN THEY ARE, AND THE VESSELS COULD TAKE TWO WEEKS TO REACH THE AREA, THERE WILL BE TWO MAIN MILITARY OPTIONS: BLOCKADE OF THE ISLANDS OR THEIR INVASION. BOTH PRESENT SERIOUS PROBLEMS.

A BLOCKADE IS INITIALLY THE MOST LIKELY. ARGENTINA IS SAID ALREADY TO HAVE UP TO 5,000 TROOPS ON THE TWO MAIN ISLANDS, AND AN INVASION COULD HARDLY BE MOUNTED WITHOUT SUBSTANTIAL RISK TO THE LIVES AND "FREEDOM" OF THE 1,800 FALKLAND ISLANDERS WHOM THE BRITISH OPERATION WOULD BE DESIGNED TO PROTECT.

THE DEFENCE MINISTRY IS RELEASING ONLY SCANT DETAILS OF THE TASK FORCE. IT HAS ACKNOWLEDGED THAT HMS INVINCIBLE, THE NEWEST AIRCRAFT CARRIER (WHICH HAS ACTUALLY BEEN SOLD TO AUSTRALIA FOR DELIVERY IN 1983) LEADS THE FORCE, TOGETHER WITH THE CARRIER HERMES AND THE TWO AGING ASSAULT SHIPS, FEARLESS AND INTRUDER (RETIRED FROM MR NOTT'S DEFENCE CUTS ONLY LAST MONTH) IS DUE TO LEAVE FROM PORTSMOUTH THIS DAY.

IT IS BELIEVED, BUT NOT CONFIRMED, THAT NEARLY 20 OTHER WARSHIPS WHICH WERE LAST WEEK ENGAGED IN EXERCISE SPRINGTRAIN OF GIBRALTAR ARE ALSO BEING SENT SOUTH, ALTHOUGH THERE WERE CONFIDING REPORTS YESTERDAY FROM GIBRALTAR THAT THEY HAD ACTUALLY BEEN SOLD. ADDITIONALLY, AT LEAST TWO ROYAL FLEET AUXILIARY TANKERS,

ARE ON THE WAY.

THE BANBURY, ORIGINALLY DUE

TO SAIL TO BUENOS AIRES ON

TUESDAY IS CARRYING A CARGO

OF MANUFACTURING GOODS FOR

ARGENTINA, AND WAS TO TAKE ON

WOOL FOR EXPORT TO EUROPE.

THE SHIP IS PART OF THE ONLY

REGULAR SERVICE OPERATED FROM

BRITAIN TO ARGENTINA. KNOWN

AS BHLR—AN ABBREVIATION OF

THE SEPARATE LINES INVOLVED—

IT IS RUN BY BLUE STAR LINE

AND FURNES WITHY.

MR WILLIAM KIRKBRIDE,

GENERAL MANAGER OF FURNES

WITHY, SAID THE SERVICE

COVERED BRAZIL, URUGUAY AND

ARGENTINA AND EARNED GROSS

FREIGHT REVENUES OF SOME £30M

A YEAR. BUT BUSINESS WAS

LARGER BEFORE BRITAIN JOINED

THE EEC WHICH HAS STRICT

QUOTAS ON MEAT EXPORTS FROM

ARGENTINA. BHLR RUNS TWO

REFRIGERATED CONTAINER SHIPS

AND SEVEN GENERAL CARGO

VESSELS.

ALTHOUGH THE SERVICE WAS

NOT A MAJOR PART OF THE COM-

PANY'S ACTIVITIES MR KIRKBRIDE

SAID: "WE ARE QUITE CON-

CERNED AND HAVE ALSO ADVISED

SOME OF OUR EXPATRIOTS IN

ARGENTINA TO GO TO MONTE-

VIEGO IN THE INTERIM PERIOD."

ANOTHER BHLR SHIP, THE

DEVON, LEFT BUENOS AIRES ABOUT

10 DAYS AGO WITH A REFRIGERATED

MEAT CARGO. THE DERWENT,

A GENERAL CARGO SHIP WAS ABOUT

TO START LOADING AT LIVERPOOL

FOR ITS SOUTH AMERICAN TRIP

BEFORE THE CRISIS.

ONE OR TWO LOGISTIC LANDING SHIPS

AND ONE OR TWO DEEP REPLENISH-

MENT SHIPS ARE SAID TO MAKE UP

A TASK FORCE OF ABOUT 30 VESSELS.

ONE OBVIOUS ADVANTAGE OF THIS

FORCE IS THAT IT WOULD BE TWICE THE SIZE OF THE CURRENT ARGENTINE FLEET IN THE AREA—EACH COUNTRY, COINCIDENTALLY, HAVING COMMITTED AT THAT POINT ABOUT HALF ITS OPERATIONAL FEET.

BRAZIL'S SURFACE ARMAMENT IS

IN GENERAL MORE MODERN AND ITS

ONE OR TWO SUBMARINES WITH THE

FORCE ARE QUIETER AND MORE

LETHAL. THOUGH BRITISH OFFICERS

PAY TRIBUTE TO THE SEAMANSHIP OF

THE ARGENTINES, THEY INSIST NOT SURPRISINGLY THAT IT IS NO MATCH FOR THE ROYAL NAVY.

FOR THEIR PART, HOWEVER, THE ARGENTINES COULD POINT TO THEIR VERY CONSIDERABLE GEOGRAPHICAL ADVANTAGE. ARGENTINA AT ITS NEAREST IS ONLY 400 MILES FROM THE FALKLANDS, AGAINST BRITAIN'S 8,000 MILES. BRITAIN'S NEAREST AIRPORT IS THE ASCENSION ISLAND BASE 3,500 MILES FROM THE ISLANDS. REFUGEE

FLIGHTS, WHICH WILL BE WITH THE FORCE, ARE A STAFF PLANE'S NIGHTMARE, ACCORDING TO ONE SENIOR OFFICER.

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UK claims to Antarctic resources at risk

BY HUGH O'SHAUGHNESSY, LATIN AMERICA CORRESPONDENT

BRITISH BASES IN ANTARCTICA HAVE BEEN TAKEN OVER AND BRITAIN'S CLAIM TO A SHARE IN THE POTENTIALLY LARGE MINERAL AND FISHING RESOURCES IN THE SOUTHERN CONTINENT HAS BEEN PUT IN JEOPARDY BY ARGENTINA'S SEIZURE OF THE FALKLAND ISLANDS AND SOUTH GEORGIA.

THE CAMBRIDGE-ADMINISTERED BRITISH SURVEY MAINTAINS SIX PERMANENT STATIONS IN ANTARCTICA AND TWO WHICH ARE MANNED ONLY IN THE SUMMER. THE BAS, WHOSE ANNUAL BUDGET IS UNDER £6M, IS THE PRINCIPAL

OFFICIAL BRITISH PRESENCE IN THE CONTINENT, A SLICE OF WHICH BETWEEN LATITUDES 20 AND 60 DEGREES WEST IS CLAIMED BY BRITAIN AS THE BRITISH ANTARCTIC TERRITORY. ARGENTINA ALSO CLAIMS SOVEREIGNTY OVER MOST OF THIS AREA.

THE TERRITORY HAS BEEN

OFFICIALLY ADMINISTERED FROM

PORT STANLEY AND ITS GOVERNOR

HAS BEEN THE GOVERNOR OF THE

FALKLAND ISLANDS AND DEPENDENCIES.

LAST YEAR THE TREASURY

SOUGHT TO CUT THE BAS BUDGET

AND HAVE THE BASE AT GRYTVIKEN

ON SOUTH GEORGIA CLOSED.

LAST OCTOBER, IT WAS ANNOUNCED THAT BRITAIN WAS TO REPLACE THE BASE AT HALLEY EARLY IN 1983 AT AN ESTIMATED COST OF £1M AND ALSO REPLACE, AT AN ESTIMATED COST OF £4M, BRITAIN'S BIGGEST ANTARCTIC RESEARCH VESSEL, HMS SHACKLETON.

THE U.S. GOVERNMENT HAS

ESTIMATED THAT THE RECOVERABLE

OFFSHORE OIL RESERVES IN THE

REGION AMOUNTED TO BILLIONS OF

BARRELS, COMPARABLE IN MAGNITUDE TO THOSE OF THE NORTH SEA.

BP, ARCO, EXXON, GULF AND

TEXACO ARE AMONG THE COMPANIES

INTERESTED IN THE REGION'S OIL.

LARGE DEPOSITS OF COAL AND

OTHER MINERALS, FROM SILVER TO

MOLYBDENUM, HAVE BEEN DIS-

COVERED.

AIR COMMODORE BRIAN FROW,

DIRECTOR GENERAL OF THE FALKLAND ISLANDS OFFICE, CLAIMED YESTERDAY THAT OIL WAS AT THE HEART OF ARGENTINA'S DECISION TO INVADE.

A BP SPEAKER SAID: "THERE IS

A PROMISING SEISMIC EVIDENCE

BUUT UNTIL WE HAVE DONE A LOT OF

DRILLING THERE WE CAN'T BE SURE

WHAT OIL IS ACTUALLY THERE."

THE TERRITORY HAS BEEN

ADMINISTERED FROM

جامعة

Fraser set for showdown over party leadership

BY MICHAEL THOMPSON-NOEL IN SYDNEY

A SHOWDOWN over Mr Malcolm Fraser's leadership of the Australian Liberal Party has been set for Thursday.

The state had been in Liberal hands since 1955.

Of the split in the Liberal ranks, Mr Fraser said in Melbourne: "If by our own division we help bring about the circumstances in which Labour's socialism can again have the opportunity to destroy Australia, we should hang our heads in shame."

Estimates of Mr Peacock's support range from 20 to 40 members of the 81-strong Parliamentary Liberal Party, though he has not yet delivered a formal challenge to Mr Fraser.

Mr Bill Hayden, the Federal Opposition leader, said yesterday that the Victoria election had been largely fought on state issues.

But he claimed that the Government's loss of credibility, the "disastrous handling" of the national economy, and its internal conflicts, had played a critical role.

He spearheads a section within the Liberal Party that is critical of Mr Fraser's handling of the economy, and worried by the party's waning political fortunes.

The swing to the ALP in

Opec may be retreating from clash with companies

BY ROGER MATTHEWS

THE ORGANISATION of Petroleum Exporting Countries may be backing away from an immediate confrontation with the international oil companies over the level of production in Nigeria.

Dr Mama Said al-Oteiba, president of Opec, said yesterday that the oil companies had reacted positively to threats of sanctions if they dropped their production levels in an effort to force down the price of Nigerian crude.

Sheik Ahmed Zaki Yamani, Saudi Arabia's Minister of Oil, said in London last week that plans were being made for an emergency Opec meeting to discuss the threat to Nigeria.

Exports from Nigeria have fallen sharply since the Vienna decision of Opec to set output ceilings in an effort to defend the \$34 a barrel reference price for Saudi light. Nigeria is currently charging \$35.50 a barrel, compared with \$31 a barrel for comparable crude from the North Sea.

PLO awaits 'retaliation'

BY ISMAN HIZA

PALESTINIAN GUERRILLAS in Lebanon are braced for a possible Israeli retaliation after Jerusalem accused the Palestine Liberation Organisation of responsibility for the assassination in Paris on Saturday of Mr Jacob Bronfman, an attaché at the Israeli embassy.

The diplomat was shot and killed by an unknown woman who then escaped.

Mr Menachem Rosen, the Israeli ambassador in France, was quick to blame the PLO. The accusation

was later repeated in a statement issued in Jerusalem by the Foreign Ministry.

A spokesman for the PLO denied the charge and added the guerrilla group knew nothing about an obscure faction which claimed responsibility for the killing.

An anonymous caller told Press offices in Beirut "the Lebanese armed revolutionary factions" were responsible for the murder of the Israeli diplomat. He added that "more surprises should be expected."

This is an invitation to Buckle Down in the State of ARKANSAS

They call Arkansas the "buckle" of America's Sunbelt. Its central location puts a market of over 100m people within 550 miles reach—just 24 hours by road. And the newly opened Arkansas River Waterway connects the heart of the State with the port of New Orleans and thence to Europe and Latin America.

Over 140 top US corporations, as well as several European and Japanese companies have all located manufacturing plants in the state.

COME AND FIND OUT WHY at a complimentary half-day seminar and reception on May 4 at the London Chamber of Commerce and Industry.

The meeting will feature presentations by key business and civic leaders from Arkansas and the State's European Industrial Development Office.

Members of the delegation will also be available for individual appointments on May 5.

These are just some of the reasons why one independent study rated Arkansas the fifth most attractive US state for business and industry.

For further information or registration contact Ian Weatherhead at the Chamber, 69 Cannon Street, London EC4N 5AB. Telephone 01-248 4444 ext 305.

Spadolini fights to save coalition

By Rupert Cornwell in Rome

SIG GIOVANNI SPADOLINI, the Italian Prime Minister, this week faces his toughest task yet in preventing the collapse of his five-party coalition, sending the country almost certainly into general elections later this year.

His first challenge comes today when he attempts to defuse the row between Christian Democrats and Socialists over accusations by a Socialist Minister that the former acted improperly in paying a ransom for the release of Sig Ciro Cirillo, a Naples party councillor held last year by the Red Brigades terrorists.

The Christian Democrat leadership, ever more embarrassed by the ramifications of the Cirillo affair, have demanded the Minister's sacking. But with the implicit backing of his party, he has maintained his charge.

Even if Sig Spadolini does find a compromise to satisfy both sides, he still faces potential trouble over the 1982 Finance Bill, for which several dangerous confidence votes may be required if its approval is to be secured before Easter as scheduled.

Sig Bettino Craxi, the Socialist leader, yesterday promised his party's backing to push the Finance Bill, vital for what remains of the Government's economic policy, on to the statute book.

At any time thereafter, however, might come the moment of reckoning, he implied.

EEC budget talks

Key negotiations by EEC Foreign Ministers on cutting back Britain's payments to the Community budget will now take place on April 27 in Luxembourg, writes John Wyles in Brussels. The Ministers had been due to meet on Saturday, but the session was postponed because the Falkland Islands crisis prevented Lord Carrington, the British Foreign Secretary, from attending.

Gromyko visit

Mr Andrei Gromyko, the Soviet Union's Foreign Minister, arrived in Belgrade on Sunday for a two-day visit and the first high-level contact between Moscow and Yugoslavia in the post-Tito era. Mr Gromyko will confer with Mr Slobodan Milošević, head of Yugoslavia's collective Presidency and Mr Dusan Dragasavac, President of the Yugoslav Communist Party.

Herd destroyed

A herd of cattle and pigs was destroyed in Denmark yesterday as foot-and-mouth disease struck again, dashing hopes that the epidemic on the island of Funen had ended. AP reports from Copenhagen. It was the 12th confirmed case since the virus, assumed to have reached Denmark from East Germany, set off the alarm two weeks ago. More than 2,500 head of cattle and pigs have been killed.

The diplomat was shot and killed by an unknown woman who then escaped.

Mr Menachem Rosen, the Israeli ambassador in France, was quick to blame the PLO. The accusation

EUROPE'S PETROCHEMICAL CRISIS

BY SUE CAMERON, CHEMICALS CORRESPONDENT

EUROPE'S loss-making petrochemical and plastics producers have closed 45m tonnes—14.7 per cent of their effective capacity over the last 15 months, according to analysts at W. Greenwell, a stockbroking firm.

But Greenwell says that "nowhere near enough" plants have yet been shut down. It stresses that in the "worst" product areas between 30 per cent and 40 per cent of capacity needs to "disappear."

Greenwell spells out the extent of Western Europe's overcapacity in such products as ethylene—the so-called building block of the petrochemical industry—and major plastic materials like polyethylene, polyethylene, 9 per cent of high density polyethylene, 8 per cent of polypropylene, 6.5 per cent of polystyrene, including expanded polystyrene, and 7 per cent of polyvinyl chloride (PVC).

These closures are described as "encouraging." But the Greenwell report warns that Europe "must not lose sight of

Major Petrochemical Companies Trend Toward Specialisation

Trend % of total sales

1970 1980

Akzo 12 22

BASF 20 30

Bayer 32 42

Hochem 30 40

ICI 17 27

Montedison 15 20

Rhône Poulenc 26 37

Solvay 3 20

including pharmaceuticals, agrochemicals (excluding fertilisers), fine chemicals, etc.

Source: W. Greenwell

a 650,000-tonnes-a-year surplus of low density and a 210,000-tonnes-a-year surplus of high density polyethylene plastic.

"As a result of these, and other, moves to muscle in on the traditional producers, prospects for most European exports of petrochemicals and plastics are poor," the report says. "For example, net exports of bulk plastics could drop from the current level of around 1m tonnes a year to a mere 400,000 tonnes a year by 1990."

The Greenwell report goes on to say that the answer to the industry's problem cannot lie in a "wholesale shift of the bulk producers into speciality chemicals and plastics."

"Specialisation can only be justified if you have the technical and existing skills in the chosen area."

U.S. groups win major Indonesian plant deals

By Richard Lambert in New York

U.S. COMPANIES have won contracts for two major projects in Indonesia. Kaiser Engineers and Kaiser Aluminum, two unrelated companies, are taking a leading role in the construction of a 600,000 metric tonne a year alumina refinery. Total cost of the alumina plant will eventually be \$960m.

At the same time, Kellogg Overseas Corporation, along with Kobe Steel and Toyo Menka Kalsha of Japan, has been awarded a contract worth around \$350m to supply a fertiliser complex in East Kalimantan.

The alumina facility will be built on Bintan Island, south-east of Singapore, for P. J. Anak Tambang, a Government corporation. The bauxite supply will be mined locally and most of the production will be shipped to a new smelter on Sumatra Island.

Production is to start in 1985. Kaiser Engineers, a unit of Raymond International of Texas, will provide design, engineering and technical services for the contract. Technical assistance will come from Kaiser Aluminum.

The fertiliser project which has been awarded by P. T. Pupuk Kalimantan Timur (Kaltim) is for a 1,500 metric ton a day fertiliser ammonia plant, a 725 metric-ton-a-day urea plant and various associated facilities. This project is also expected to go into operation in 1985.

Kellogg, a member of the M. W. Kellogg group of companies, will provide technology for the ammonia plant. Technology for the urea plant will come from Stamicarbon, for which Kellogg is a worldwide licensee.

SHIPPING REPORT

Revenue crisis deepens for world's shipowners

BY ANDREW FISHER, SHIPPING CORRESPONDENT

MOST SHIPOWNERS are scarcely able to pay their crews and cover other direct operating costs in the present dismal state of world shipping markets, Lambert Brothers Shipping said in its latest review.

As a result, shipowners were having to find more cash from within their companies or from outside to cover losses, or to renegotiate or defer loan payments.

Another alternative, Lambert added, was to entrust the care of their fleets to professional managers of large fleets able to cut costs through economies of scale.

Speaking in Oslo last week, a leading expert in shipping finance emphasised that owners

should now be looking at restructuring their loans rather than waiting until times became really bad.

Mr J. Magne Haga, a general manager of Christiania Bank said: "Wise shipowners will come to see us on deferrals and refinancing nine to 12 months before events occur."

He told journalists that his bank was now talking to customers to suggest deferrals of loan interest repayments.

"There has been very little deferment yet and that worries me."

Mr Haga said his remarks were not meant to refer only to the Norwegian industry, but to the whole shipping world.

BY OUR WORLD TRADE STAFF

WADE ADAMS Construction of the UK in a joint venture with Andrews and Kidd of Zimbabwe, has been awarded the contract for the raising of the Sebakwe Dam near Que Que in Zimbabwe.

Wade Adams/Andrews and Kidd won the Z\$13.5m (£10.5m) contract against competition from Roberts Construction, Cementation International and Gulliver/Fairlough.

World Economic Indicators

FOREIGN EXCHANGE RESERVES (US\$bn)

	Jan '81	Dec '81	Nov '81	Oct '81	Dec '80
UK	12,587	12,810	12,114	18,715	10,662
USA	9,534	9,774	10,732	44,364	4,434
West Germany	37,467	39,645	40,443	3,787	9,911
Netherlands	7,654	8,071	7,961	6,471	3,264
Belgium	3,264	3,767	4,110	22,724	2,724
Japan	24,579	24,716	25,035	20,480	25,338
Italy	17,790	18,617	17,020	19,464	18,715
France	Dec '81	Nov '81	Oct '81	Dec '80	Jan '81
	19,976	19,518	19,464	19,464	19,464

Source: IMF

The Alternative Approach to Banking

THE HIGHER THE MANAGER/CUSTOMER RATIO THE FEWER DISSATISFIED CUSTOMERS.

We have more managers per customer than the other main High Street banks. That, in our view, is the way it should be, and that's the way we aim to keep it. It gives us distinct advantages over other banks which new customers are quick to recognise; particularly business customers, for whom it is supremely important to have ready access to their local branch management at all times. And at all places. Our managers make a point of visiting customers on their own ground as often as possible, to make sure they have a really thorough appreciation of each particular business and the kind of financial problems and opportunities that can be anticipated.

And the time spent with our management can be that much

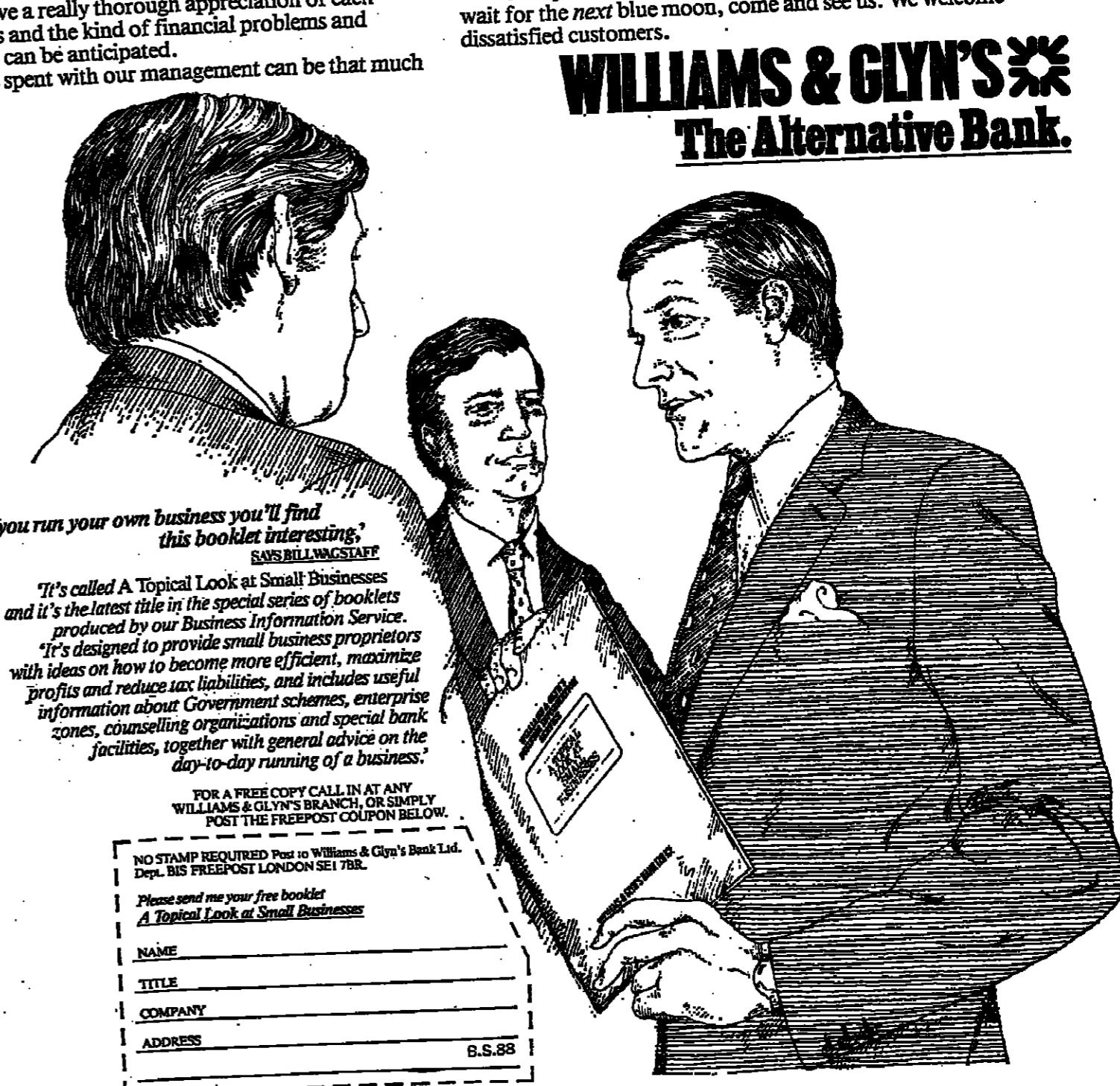
more valuable, too, because the tightly-knit way we're structured means that our managers in their turn have ready access to all our top banking specialists, who are always ready to attend meetings, give on-the-spot advice, and when necessary make on-the-spot decisions.

It all adds up to a whole new approach to banking, a refreshing change from the kind of branch management lethargy that is so often generated by ponderous pomposity at the top.

So if you see your bank manager once in a blue moon, don't wait for the next blue moon, come and see us. We welcome dissatisfied customers.

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The Alternative Bank.



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SAYS WILLIAMS & GLYN'S STAFF

It's called *A Topical Look at Small Businesses* and it's the latest title in the special series of booklets produced by our Business Information Service. It's designed to provide small business proprietors with ideas on how to become more efficient, maximize profits and reduce tax liabilities, and includes useful information about Government schemes, enterprise zones, counselling organizations and special bank facilities, together with general advice on the day-to-day running of a business.

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UK NEWS

CBI supports existing local rates system

BY ALAN PIKE

THE Confederation of British Industry, which has been campaigning against the rates burden on industry, has told the Government the rating system should none the less remain the mainstay of local taxation.

In response to the Green Paper "called Alternatives to Domestic Rates" the confederation says the rating system needs urgent reform, to ensure it does not discriminate against business ratepayers and to give more local accountability.

The confederation does not believe, however, that the case has been made for introducing local income, sales or poll-taxes to replace or supplement rates. It recommends that sub-

ject to changes both domestic and business rates should be retained.

In particular it wants a measure of business derating introduced now. It suggests a 15 per cent level, which would cost about £720m a year at 1981-82 prices.

The confederation wants a limit on business rate rises. The limit would prevent increases rising faster than either the inflation rate or the increase in local taxation on individuals.

It also seeks abolition of rating of empty premises, or at least a cut to the level needed to pay for services from which such premises benefit, such as police and fire services.

The confederation also says business ratepayers should have the same right as domestic ones to pay rates by instalment.

"We recognise this will adversely affect the cash-flow of local authorities, but in the current recession the cash-flow of business should be of far greater concern to the Government."

The confederation concludes that more local rate and grant-borne expenditure should be met from local authority expenditure but concludes this would require detailed inquiry.

"In the last analysis, although financial aspects are important, the overriding interest must be the achievement of the highest quality of education, relevant to

the needs of the nation and of the young people themselves."

Severe price-cutting in the North has led to a collapse of private-sector industrial prices, according to a survey published today by the CBI's northern region.

It said 54 per cent of companies surveyed, cut some prices to other companies over the past year, 55 per cent held prices of some products steady, 67 per cent raised prices by limited amounts only and 34 per cent said there was strong resistance to increases from other companies in the home market. The picture in export markets was almost exactly the same.

It suggests, however, this does not mean domestic rates would have to rise in absolute terms, because local spending could be cut, and fees and charges raised.

The confederation does not believe, however, that the case has been made for introducing local income, sales or poll-taxes to replace or supplement rates. It recommends that sub-

Brixton: The tough task of converting words into action

A year after the riots, Lisa Wood looks at what is being done to halt the decline of the area

SINCE THE riots in Brixton, thousands of words have been written about this south London inner-city area. They include a major report by Lord Scarman, some of whose recommendations are increasingly arousing controversy.

Government Ministers, the private sector, including a Nigerian chief, academics and American blacks with the experience of black self-help projects, have put forward a variety of initiatives.

Obviously, there are no easy solutions to problems which are not all specific to Brixton and which span the whole of Britain's inner city areas, where about 40 per cent of ethnic minorities live and where the problems of economic decline, physical decay and adverse social factors feed upon one another.

Three proposals illustrate the problems of transferring projects into action. They include the Government's inner city partnership funding to Lambeth, which in 1981-82 was £25.75m, increased in 1982-83 to more than £12m, the local action plan for a new shopping centre and a police crime prevention campaign.

This year, for the first time, two applications from the voluntary sector for capital funding from the inner city partnership have come from non-established black groups, members of "the alienated hard

core" of Brixton's black unemployed, who centre their activities on Railton Road, now half derelict but the proposed site of a large housing estate, a project brought forward by the council after the riots.

Whereas last year, unemployment among young West Indians under 19 years of age was estimated at about 60 per cent, it is now estimated at more than 70 per cent in a borough where male unemployment at 19.4 per cent in December, has increased by 50 per cent during the last year.

The major project is a cultural centre—the Afro-Caribbean Centre—costed over a three-year period at some £1m. It is intended for people 18 upwards, whose needs are not catered for at the Railton Road Methodist Youth Club. Mr Leo Clowden, a black social worker, said: "Central government will not fund a revenue project of this kind, so we are now working out an outline of running costs."

Lambeth Council is working out ways of supporting the project, but is aware of the pitfalls. For if the purpose-built centre is built but organisers cannot provide full funding for running costs, members of "the alienated hard

core" of Cold Harbour Lane.

Mr Jeremy Brown, Lambeth's new chief town planner, said: "The development would not involve a radical reshaping of Brixton, but it would attract an injection of private capital to the area. There are large developers genuinely interested, and the fear is that, if the council dithers, they may go away."

Some members feel that the private sector ought not to be given the opportunity in the area, after years of not investing in Brixton, but all agree that the lack of a decision over several years has contributed to the decay of Brixton."

But last month, the Council's Labour group and the Social Democrats in the Council Chamber voted against putting the plan on deposit for six weeks—the statutory period required before the action plan either goes to local inquiry or is put out to tender.

The Labour group, according to Mr Knight, took the decision because of opposition from some local residents, whose homes would be affected by the plan.

Wider consultation is now planned, "with those 50,000 people who live in walking

distance of Brixton and who, in the council's view, should not be opposed by small groups in the community." At the same time, Mr Knight said: "Once we deposit the plan and, if there is a public inquiry, the Environment Secretary can intervene."

We have not been happy with the Secretary of State's intervention on other planning matters."

The Social Democrats, who are strongly contesting the local election in Lambeth next month, have opposed the present development in its manifesto. Mr Patrick Mitchell, of Lambeth's SDP, said: "We are sceptical of a large-scale new development in Brixton; there is no scope for Brixton challenging a shopping development like Croydon."

In the shorter term, the immediate preoccupation in Brixton appears to concern crime and policing. A recent Crime Prevention Campaign, launched according to the police inadvertently on the eve of publication of Metropolitan crime figures which broke down the ethnic origin of offenders, afforded sections of the community to give vent to their feelings.

Many white residents, at the meeting in Lambeth Town Hall, called for stronger police action against muggings while young blacks questioned the accuracy of reported crime figures and said they were still being harassed by the police.

Trend is to small units, Cadbury chief says

By Alan Pike

LARGE companies are likely to come under increasing pressure from social and economic trends to split their businesses into smaller units, according to Sir Adrian Cadbury, chairman of Cadbury Schweppes.

Sir Adrian, a leading figure in the Confederation of British Industry, says in the magazine Personnel Management that in a highly competitive world of slow growth, any business organised with traditional large-scale overheads would lose out against more flexible rivals.

Smaller businesses could adapt rapidly to marketplace and cost changes, and could buy in services instead of providing them directly.

Sir Adrian expects that large companies will make elements of their businesses as independent as possible, with each section stripping out non-essential activities. He predicts a growth in self-employed people—often former managers—providing services like administration, computing and design.

Levels of economic growth of the 1950s and 1960s are unlikely to return this century, Sir Adrian says. Businesses would have to operate in the present unpredictable environment and accept the likelihood that it would become less rather than more stable.

Apart from the impact of this economic climate on the organisation of companies, he predicts a change in working habits which might lead to people contracting to supply a specified number of hours a year, allowing individuals greater freedom to organise their working lives.

BIM guide to help expanding companies

A CHECKLIST to help smaller companies thinking of buying another business has been published by the British Institute of Management.

The guide—Buying a company—A checklist guide to successful acquisitions for the smaller company, lists more than 260 questions which can be used to make an appraisal of a business's value and prospects.

The guide points out that although intuition and business experience play a key role, knowing exactly what is being bought is of fundamental importance.

Shotton gasholder to be blown up

A WELSH industrial landmark will disappear today when a 155-foot high gas holder is blown up at Shotton steel works, North Wales.

Thirty explosive charges embedded in the 1m cubic feet holder are due to blow down the 1,000-ton structure. Because of the size and shape of the holder, a 16-sided tank more than 100 ft wide, special pre-weakening has had to be done to help the explosives.

Business failures soar in first quarter

TRADE INDEMNITY, the credit insurance underwriters, has disclosed a 15 per cent increase in business failures in the first quarter of 1982 compared with the same quarter of 1981.

Mr Hugh Dowell, Trade Indemnity's assistant general manager, said that in January the business failure rate seemed to be easing, but since then there had been a steady deterioration. Business failures notified to us in February and March increased by 25 and 30 per cent respectively, compared with the same month in 1981.

NatWest to help small engineering groups

NATIONAL Westminster Bank is to sponsor a move by the London Enterprise Agency to help small engineering companies.

The agency, backed by several big companies, is proposing a computerised supplied identification system which would give purchasing managers quick access to comprehensive information about the capabilities of potential suppliers or sub-contractors.

£400,000 air payout

Castle Donington, the east midlands airport near Derby, has doubled to £400,000 the share of operating profits it pays to the local authority consortium which owns it.

Chariots of Fire

In Thursday's story in the Financial Times about film financing in the wake of the Oscar successes of Chariots of Fire, it should be made clear that the Twentieth Century Fox Film Corporation and Allied Stars were 50/50 partners in providing \$3m each for the film's production finance. Goldcrest Films and Television, a Pearson Longman subsidiary financed the initial development costs.

Small groups want to set public pay levels

By PHILIP BASSETT, LABOUR CORRESPONDENT

PAY in small companies should be used to determine levels for the Civil Service, according to the Association of Independent Businesses.

The group, formerly the Smaller Businesses Association, represents small companies employing a total of about 5m workers. In evidence to the Government's inquiry into Civil Service pay, it says the public sector structure sets pay, benefits and conditions of service "at a level that our members, forced to pay only that which can be earned, are unable to match."

The inquiry, chaired by Sir John Megaw, is due to report by mid-summer in time for the 1983 pay settlement for 530,000 white-collar civil servants.

The proposed first tier would concentrate on setting national basic rates, with second tier bargaining on a departmental or regional basis. To avoid leapfrogging or attempts to renegotiate agreements at local level, cash limits should apply to both levels.

FT story leads to cash boost for furniture maker

By RHYTHM DAVID

AN AMERICAN oil businessman is to invest £100,000 from his own resources in a small Liverpool reproduction furniture manufacturing company after reading about its activities in the Financial Times in August.

The company, Goetins, specialises in producing copies of period furniture and has made a point of recruiting into its labour force—now 30 strong—unemployed youths, and of training them in cabinet-making skills. It is planning to open a training workshop for 100 young people with sponsorship from the charity, the Rathbone Trust, and with financial aid from the Manpower Services Commission this autumn.

This commitment to youth and the company's range of products which have been sold from the Middle East to the U.S.—strongly appealed to Mr Logan, president and chief executive officer of United Refining of Pennsylvania until its take-over last year by Coal Oil, and now its vice-chairman.

Mr Logan said: "I have spent all my life in the petroleum industry where one never sees the end product, and I was looking for an interest as far away as possible from oil. Furniture fitted the bill because it is tangible and beautiful. At the same time this is a company which is preserving old skills and training the young to work with their hands.

"It is creating something of value and satisfaction and furthermore giving young people a reason to look to the future with more confidence."

After reading the Financial Times story, Mr Logan, whose parents came from Britain, commissioned a report from Goetins' owners Mr and Mrs David Simpson on their operation and last autumn made the first of several visits.

Mr Simpson said: "He asked

the company has orders standing at more than £100,000 for a range of products which includes replicas of furniture at Speke Hall—a nearby half timbered house—Welsh dressers, four poster beds and desks. About 80 per cent of furniture is exported to the U.S., which Simpson visits twice a year to talk to interior designers. The link with Mr Logan is expected to bring the company valuable contacts with a number of top U.S. businessmen.

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The commission announced last week that it intends to devote more resources to conservation and give higher priority to resolving conflicts between voluntary groups and the private sector.

More money is to be spent on development grants for

Countryside Commission opens up to the public

THE COUNTRYSIDE Commission, which was made independent last week, has launched a new prospectus opening up its policies and priorities to public comment.

The commission announced last week that it intends to devote more resources to conservation and give higher priority to resolving conflicts between voluntary groups and the private sector.

The commission's change of status, from April 1 this year, was provided for by the Wildlife and Countryside Act. The commission is now less dependent on the Civil Service and directly accountable to par-

liamentary bodies and there is to be an annual award scheme, with the Country Landowners' Association, for public or private landowners who make notable achievements in improving understanding between town and country.

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UK NEWS

Top earners start to pay higher NI contributions

BY ERIC SHORT

THE START of a new financial year means various adjustments in tax payments by individuals. For the past three years it has also meant increases in the National Insurance contributions paid by employees and the self-employed — contributions that can be regarded as a social security tax.

From this week, employees earning at least £220 a week will pay an extra £3.75 a week on NI contributions if they are in the state scheme and £3.32 if they are contracted out.

A self-employed person earning £11,000 a year will pay an extra £67.35 a year.

These increased payments, which were announced by Sir Geoffrey Howe, the Chancellor, at the beginning of December, arise from two factors. All employees are having their contribution rates increased by 1 per cent for the second year in succession, though the rates for their employers remain unchanged.

Secondly, both employees and employers will have those contribution rates applied to higher earnings limits because of inflation.

The Government has been quietly changing the financing structure of the National Insurance scheme, putting more of a burden on to employees and reducing the direct cost to the Treasury.

For the second year running the amount of Treasury sup-

Weekly earnings	1982/83 weekly contribution £	1981/82 weekly contribution £
Not contracted out		
Employee	13.12	11.62
220	15.25	15.50
Employer	20.55	20.55
220	30.14	27.40
Contracted out		
Employee	10.71	8.55
220	14.49	11.17
Employer	15.13	15.02
220	21.57	19.62
Self-employed		
1982/83 annual contribution £	1981/82 annual contribution £	
Annual profits	£	£
£ 7,800	£ 45,600	£ 44,170
£ 11,000	£ 64,000	£ 57,670

* Includes NI surcharges at 3% per cent and other charges.

ment to the NI fund is reduced this year from 14½ per cent to 13 per cent of combined employee-employer contributions.

To compensate, the contribution rate by employees is increased by ½ per cent.

The Government believes that more of the cost burden of the National Health Service should come from direct contributions rather than coming

£3,450 and £11,000.

If the individual was born before 1916, the amount on which tax relief is given is to

be increased. Some small increase has been allowed in the figures for older savers, but the real change is for those born between 1916 and 1933. They will now get tax relief on 20 per cent of relevant earnings instead of 17½ per cent.

This is a welcome assistance for those in their 50s who see retirement approaching.

Retirement tax relief boosted

TWO SMALL but welcome extensions are proposed to the scheme of tax relief for retirement annuity premiums paid by a self-employed person. Such an individual gets tax relief on his contributions up to 17½ per cent of his relevant earnings.

If the individual was born before 1916, the amount on which tax relief is given is to

be increased. Some small increase has been allowed in the figures for older savers, but the real change is for those born between 1916 and 1933. They will now get tax relief on 20 per cent of relevant earnings instead of 17½ per cent.

This is a welcome assistance for those in their 50s who see retirement approaching.

Threat of 50% jobless in Dungannon

BY OUR BELFAST CORRESPONDENT

THE PROPOSED closure of a Courtaulds' fabric dyeing and finishing plant at Dungannon, Northern Ireland, will make the area Europe's worst unemployment blackspot, according to a group representing the 300 employees.

The campaign to save the Brown and Adam dye works, part of the Moygashel fabric company, has been taken up by Northern Ireland's three European MPs. They believe the

closure will cast doubts over the remaining 480 jobs in the Moygashel group.

With representatives of the employees, the European MPs will meet Mr Adam Butler, Minister of State for Northern Ireland, tomorrow to ask what support the Government will give to a £2.4m proposal to modernise the works.

Union leaders and other members of the works committee will fly to London

tomorrow to seek support for the proposal from Mr Christopher Hogg, the Courtaulds chairman.

Courtaulds announced last month that it proposed to close Brown and Adam because of high costs and to transfer the work to Samuel Heaps.

The workers' committee said yesterday that according to local management, a government offer of 5 per cent of the cost of modernisation would provide the basis for negotiations.

Midlands plea for action on Japan

BY ARTHUR SMITH, MIDLANDS CORRESPONDENT

THE West Midlands regional council of the Confederation of British Industry is urging the Government to take immediate action to improve the balance of trade with Japan.

"There is a feeling that the industrial base of the region is being eroded," Mr Steve Rankin, regional director, said last night. "We are fast running out of time. There must be immediate action." Mr Rankin said com-

panies representing the full range of industry had expressed strong views about the threat.

There was a need to make Japan open its market to European companies and to curb the flow of Japanese imports.

An initiative might be taken on a national or an EEC basis. The CBI was already pressing the case but companies in the West Midlands thought the situation needed to be treated with urgency. The Japanese

shakeout of the labour market seems likely to continue.



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Maiden flight for new Euro Airbus

Why inland post is carried by air
Jason Crisp describes a night flight delivering the Post Office mail

By Michael Donne,
Aerospace Correspondent

THE LATEST version of the European Airbus, the 210-seat A-310, made its maiden flight from the Airbus Industrie's flight test centre at Toulouse on Saturday.

The aircraft was airborne for 3 hours 15 minutes, in what was described as a perfect test flight. The aircraft will now move into an extended flight test programme, prior to certification and delivery in March, 1983, to the launching customers, Swissair and Luft-



Glyn Genin

EVERY WEEKDAY night at around 11 o'clock an assorted collection of 16 aeroplanes takes off from all corners in Britain to rendezvous at Liverpool airport at midnight.

The A-310 is designed to carry up to 210 passengers over short to medium ranges. It is a twin-engined aircraft, with operators having the choice of U.S. General Electric CF6-50A or Pratt and Whitney engines.

Orders for 180 A-310s have been placed by 15 airlines. Of these 90 are firm orders and the others are options.

The feature of the aircraft is its substantially lower fuel consumption, claimed to be up to 35 per cent less per seat than older-generation narrow-bodied jet airliners, giving savings of up to \$2m (£1.1m) a year in fuel costs at today's prices.

Five A-310s will be involved in the flight test programme. The first two aircraft, powered by Pratt and Whitney engines (destined for Swissair), and the third aircraft, powered by General Electric engines (for Lufthansa), will be used for the actual flight tests. The fourth and fifth aircraft of the line (destined for Lufthansa and Swissair respectively) will be used for route-proving trials.

Air transport of mail began after the Post Office came under heavy criticism for the quality of service which had dropped to an appallingly low level.

Because of this, the Government included provisions in the British Telecommunications Bill, passed last year, which sanctioned it to lift the mail monopoly if services fell below certain standards.

The Post Office has a Government-set target to deliver 90 per cent of first class letters on the following working day, which it is now close to meeting.

British Rail carries around 70 per cent of the mail and the Post Office is one of its largest customers. During the rail strike, the volume of air freight mail rose sharply, diminishing the impact of the action on mail delivery.

The aircraft are chartered from five different airlines—Express Air Services, Iceni Aviation, Eastern Airways, Jersey European Airways, and Dan Air. They fly from 13 destinations including Belfast, Aberdeen, Exeter, Cardiff, Bournemouth, Bristol, Glasgow and Gatwick.

Last week, I flew with Dan Air on the Gatwick to Liverpool flight which then goes on to Belfast. The aircraft was a British Aerospace 748 turbo-prop, with the seats folded and stacked along the side of the passenger compartment.

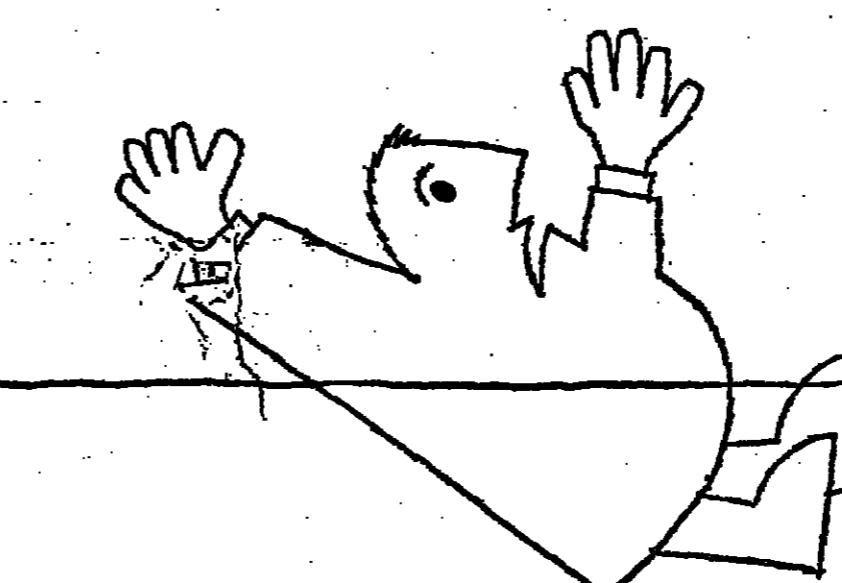
The aircraft was filled almost to the ceiling with mail bags which weighed 4½ tonnes, and were held in place by large nets and harnesses.

By the following morning, the seats were to be back in place and the aircraft was used for ferrying passengers.

It normally carries a maximum of just under 50 passengers.

At Speke, the 16 aircraft are parked in a close group and are rapidly unloaded by about 30 airport authority staff. The mail bags are moved to a small warehouse for sorting by the Post Office where there is a staff of 18.

Datapost now has over 20,000 contract customers and carries a wide range of urgent goods from parts to documents. The carriage of urgent documents was one of the small areas which was opened up for competition by the British Telecommunications Act.



Have you recently found yourself becoming an involuntary non-profit organization?

The earnings reports of many companies are experiencing a widespread outbreak of parentheses. (We mean those depressing bow-legged punctuations that signify operating losses in balance sheets.)

In fact, the problem of diminishing profitability is widespread enough to have acquired an aura of immutability, something like a law of contemporary economics...making it sound almost audacious to suggest the problem is solvable.

Perhaps it's time for a little audacity...and a Data General ECLIPSE® computer.

ECLIPSE is a complete information system that will never be accused of insufficient ambition: its mission is to help cause immediate and dramatic improvement in your bottom line.

It does this by helping you instantly identify

inventories carried unprofitably, back orders being filled tardily, cash flow problems...those areas where profits often erode unseen by management.

It isn't surprising then, to find an ECLIPSE computer turning up in so many profit-making organisations, like Express Dairy Foods, North Thames Gas and Guinness Group Sales (Ireland).

In fact, many of the largest and most successful British companies in banking, industry, distribution and services are using Data General computers. Is this a stunning coincidence or a considerable profit opportunity?

Those who still believe in opportunities are invited to write for particulars to: Marketing Communications, Data General Limited, 3rd and 4th Floors, Hounslow House, 724-734 London Road, Hounslow, Middlesex TW3 1PD. Tel: 01-572 7455.

 Data General
COMPUTERS

UK NEWS = LABOUR

John Lloyd looks at the closed shop in our concluding feature on Tebbit's Bill

Rights for those who will not join a union

ONLY ONE part of the Employment Bill was a complete surprise: that was Clause 1, which enables "the Secretary of State to make payments towards compensating individuals who in certain past cases have been dismissed for failure to conform to the requirements of a union membership agreement (closed shop)."

Curiously, the inspiration for the clause came to Sir Norman Tebbit, the Employment Secretary, from a report which, though still unpublished, is thought not to be particularly critical of the closed shop.

Professor John Gennard, of Strathclyde University, undertook a major study of the institution in 1978, financed by the Employment Department. One section of the report notes that about 320 individuals were dismissed from their jobs between 1974 and 1980 because they refused to join closed shops.

Mr Tebbit decided that the waters should not close over the heads of the victims. He therefore set aside £2m, or a little more than £6,000 per person, with which to make amends. It was an unusual step for retrospective legislation is not popular in Westminster. However, according to Mr Walter Goldsmith, director general of the Institute of Directors and a close adviser to Mr Tebbit, "retrospective legislation is perfectly valid if it rights wrong, but not if it wrongs a right."

The Labour opposition has



TWO CLAUSES extend the restrictions on the closed shop to include:

• In Clause 1, a measure to pay state compensation to workers dismissed for not joining a union closed shop between 1974 and 1980;

• In Clause 10, a measure to make void any term in a contract specifying union labour only, and making it unlawful to discriminate against a contractor on union membership grounds.

been so far unsuccessful in eliciting from Mr Tebbit details of those who will benefit from the fund. His department has said that further research needs to be done. However, one group, which may be representative of all, is the so-called "Hull Six" — Hull City Council employees dismissed for refusing to join a union once Hull had agreed a closed shop in 1974.

Of the six, five were manual workers, and included a building foreman, a plumber and a museum attendant. Only one — Mr Peter Armstrong, an archaeologist — was of officer grade.

Mr Armstrong, now in his mid-thirties, had been employed by the council for six years when he was told he would be required to join a union. He was, he says, opposed to "the way it was done," an objection which appears the other five shared.

"The thing just seemed so cut and dried. There was no balloting of the staff. It was just said that this was now a condition of employment. It was the result of a process on which

I had not been represented. I think that each of us in our own way thought we had been deprived of that wonderful freedom of voting with our feet."

Ironically, Mr Armstrong now says he appears likely to be forced to enjoy that freedom.

He is employed by another authority — Rumburgh — which will shortly cut its archaeological staff from eight to two.

Mr Armstrong's case, and that of his colleagues, has been championed by Mr Philip Hamer, a Hull solicitor. He has secured a ruling from the European Court that the Hull Six case would fall under the same judgment terms as those of the dismissed railwaymen whose case was won in Strasbourg last year. Mr Armstrong believes they will all receive compensation from the £2m fund once the Employment Bill is enacted.

The final measure on the closed shop in the legislation was thoroughly expected. Mr Peter Kavanagh, building trades secretary for the Trads

port and General Workers' south-east region, argued powerfully at a left-wing trade unions' conference last week end that this measure in the Bill could set the construction industry alight.

That same weekend, it became clear that the print unions, especially the National Graphical Association, had told the other unions that they would simply defy the clause and others on the closed shop — and would expect TUC support for doing so.

Both construction and the print have proved combustible areas for industrial law in this last decade, and could be so again. The building trade employers wanted the clause, and must now be willing to face it, gambling that the very high levels of unemployment will damp down incipient flames.

Will the unions convince their members to defend the closed shop in all its ramifications? And if they do, will they wait for an employers' attack which never comes? Mr Goldsmith, and the Government with him, believes the issue to be one of personal freedom and the securing of greater efficiency through breaking the degree of control unions exercise on work practices.

The unions argue that personal liberty can be ensured but only if bargaining strength is secured first and that attacks on the closed shop are an invitation to disruption. The battle still waits on a battlefield.

GMWU ballot on Labour leader sought

BY JOHN LLOYD, LABOUR EDITOR

CALLS FOR membership ballot before the block vote is cast for leader or deputy leader of the Labour Party are included in the preliminary agenda for the annual conference of the General and Municipal Workers' Union in May.

Further motions regret the GMWU's executive decision to vote for Mr Denis Healey in the deputy leadership election last year, claiming that the vote did not reflect union policy.

A number of resolutions also express concern over the splits in the Labour Party, and the Buxton branch calls for a vote of no confidence in the party "because it has disregarded its duty to the working class that it is representing during its time in opposition."

One motion calls for "serious and urgent consideration to any future financial aid we may contemplate" giving to the Labour Party "because of the infiltration of the Militant Tendency."

The motion is proposed by

Oldham, which urges "that the next Labour government re-negotiate new terms of membership of the EEC that will be of more benefit to the UK, or alternatively withdraw membership from the EEC."

If carried, the motion would bring the union to a broadly pro-EEC position and might have a similar effect on the TUC. A number of senior TUC figures have expressed doubts about the anti-European policy.

Bank union warns staff of new technology jobs threat

BY BRIAN GROOM, LABOUR STAFF

THE BANKING, Insurance and Finance Union is launching a new technology agreements. Bifu has met little success in persuading employers to sign agreements which would protect jobs from technological change, and give the union a substantial say in decisions on equipment.

The clearing banks, in particular, accuse Bifu of "scaremongering" about the employment effects of new technology, and believe that it is merely

trying to pacify by spreading fear. Actual technological developments such as point-of-sales terminals, largely automated "in-store" banking, increasing numbers of auto-tellers, and "stand-alone" computers, tend to dominate gatherings of union activists, but often meet apathy among staffs generally.

Mr Leif Mills, Bifu general

secretary, said that while no specific flashpoints had yet arisen over new equipment, there had been concern over rationalisations linked to technological change.

Bifu cites job reductions at Midland Bank's head office, and redundancies at Lombard North Central, a National Westminster hire purchase and leasing company.

The union's executive has agreed to advise members "when necessary" to obstruct the introduction of technology by employers who have refused

Call for equal pay laws to be strengthened

BY JOHN LLOYD, LABOUR EDITOR

A CALL for the strengthening of existing laws and greater union organisation to improve women's pay is made today by the Low Pay Unit.

The unit's report, Women: Work and Wages, says women earn less than 75 per cent of male average earnings for every hour worked. They comprise 60 per cent of the low-paid though they represent 30 per cent only of the paid workforce.

The report says the movement towards equal pay between 1970-76 has halted and in some cases been reversed in the past few years.

The report's authors base their findings on research done for the Employment Department in the 1970s. They say employers have been able to evade equal-pay laws by moving men or women out of jobs to avoid equal-pay comparisons.

It says the main reasons for low pay among women workers is that they are concentrated in the traditional low-wage industries or are in lower grades of better-paid sectors. Women

must often work part-time, or in high-turnover industries, to take time off for family responsibilities.

The authors say: "The removal of discriminatory practices or procedures alone is unlikely to lead to a significant reduction in job-segregation in the near future."

"Without more positive measures to overcome the effects of past discrimination and to break down the subtle barriers which limit women's opportunities at work, women are likely to remain among the low paid."

They propose:

• Strengthening existing laws to promote positive action to break down the effects of past discrimination;

• A positive action through programmes introduced by collective-bargaining and greater union organisation among women workers; and,

• Extended parental leave, shorter hours, part-time working and job-sharing, and better day-care facilities for children.

Insurance staff vote today on 8% wage offer

By Our Labour Editor

LEGAL AND GENERAL staff vote today on an 8 per cent pay offer from the company which union officials have already rejected.

Mr James Terry, divisional officer for the Association of Scientific, Technical and Managerial Staffs, said last night that the offer was derisory and he expected overwhelming rejection. The union organises about half of L and G's 5,000 staff.

Mr Terry said company profits had risen by 36 per cent in the past year, and dividends paid to shareholders had risen by 44 per cent.

Perkins claim

SHOP STEWARDS representing 5,900 production workers at the Perkins diesel-engine plant at Peterborough, Cambridgeshire, have demanded a 12 per cent pay rise. The increase would give £13 more a week to senior skilled men

BUSINESSMAN'S DIARY

UK TRADE FAIRS AND EXHIBITIONS

Date	Title	Venue
Current	Concrete Society Exhibition and Conference (01-730 8852) (until Apr 7)	Met. Exhn. Hall, Brighton
Apr 7-14	Birmingham Motor Show (0603 51202)	Bingley Hall
Apr 9-18	International Motorcycle Show (0203 72427)	NEC, Birmingham
Apr 18-19	British Pet Industry Exhibition (0233 38656)	Exhibition Centre, Harrogate
Apr 19-23	International Fire, Security and Safety Exhibition IFSEC (01-352 7651)	Barbican Centre
Apr 20-22	All Electronics Show (0793 22612)	Cumberland Hotel, W.1
Apr 22-24	International Property Exhibition (01-499 8811)	NEC, Birmingham
Apr 22-May 3	International Ideal Homes Exhibition (021-705 6707)	Earls Court
Apr 23-25	Computer Fair (01-643 8040)	Earls Court
Apr 26-30	Storage Handling and Distribution Exhibition-SHD (01-46 2411)	Sandown Park, Esher
Apr 26-29	EIA Engineering Exhibition-ENGENEX (0403 68380)	Olympia
May 4-7	Home and Contract Textiles Show (01-355 1200)	NEC, Birmingham
May 8-10	Opratex (01-405 8101)	Exhibition Centre, Harrogate
May 9-11	British Craft Trade Fair (0282 887153)	Wembley Conference Centre
May 11-13	Microcomputer Show (09274 28211)	Wembley Conference Centre

OVERSEAS TRADE FAIRS AND EXHIBITIONS

Date	Title	Venue
Apr 14-23	National Mechanics Trade Fair (01-468 8868)	Sao Paulo
Apr 15-24	International Electronic Packaging and Production Equipment Exhibition — INTERNEPCON (0482 38085)	Peking
Apr 20-25	International Building Exhibition-FINBUILD (01-486 1981)	Helsinki
Apr 22-26	International Carpet, Wallpapers, Wall Coverings and Furnishing Textiles Exhibition-PARITEX (01-393 3864)	Paris
Apr 25-29	Agricultural Industry Exhibition-SAUDIAGRI (01-256 1851)	Riyadh
Apr 26-29	Health, Safety and Environment at Work Exhibition-ARBO (01-228 2880)	Amsterdam
Apr 27-30	Biochemical and Instrumental Analysis Exhibition (01-488 1981)	Munich
May 1-5	Fast Food and Catering Exhibition (01-935 8200)	Dubai
May 3-6	Offshore Technology Conference and Exhibition (01-486 1981)	Houston
May 6-11	KORTEX S2-Korea International Textile Machinery Exhibition (Seoul 778 0821)	Seoul
May 11-14	SITEV 82 International Exhibition of the Suppliers of the Vehicle Industry (Geneva 32-88.05)	Geneva

BUSINESS AND MANAGEMENT CONFERENCES

Date	Title	Venue
Current	University of Leeds: Freight Transport Policy — The Role of New Technology (0532 35036)	Harrogate
Apr 5-6	American Tax Institute in Europe: Foreign Investment in U.S. Real Property (Apr. 5); UK Taxation of International Operations (Paris 256 3370)	Waldorf Hotel, WC2
Apr 6-7	Lloyd's of London Press: Ship Finance (01-730 2182)	Singapore
Apr 7	The Henley School for Forecasting: Corporate Plans after the Budget (01-353 9861)	London Press Centre
Apr 14-15	The Economist: Economic Regulation in Practice — Enforcement procedures and their implications for industry (01-839 7000)	University College, Oxford
Apr 16	ESC: Current issues in financial reporting (097 282 2711)	Bowater Conf. Centre, SW1
Apr 19-20	The Textile Institute: Structure and Properties of Modern Fibres (061-834 6867)	UMIST, Manchester
Apr 21	The Healey Centre for Forecasting: Exchange Rates and the Eighties (01-353 9861)	London Press Centre
Apr 21-23	INSIG: International Banking Seminar—Banks and Computers (Paris 78307 24)	Paris
Apr 21-22	Crown Eagle Communications: Franchising (01-636 0617)	Churchill Hotel, W1
Apr 22-25	NAPF 1982 Annual Conference (01-681 2517)	Bournemouth
Apr 26-27	International Chamber of Commerce: Financial Futures Markets (Paris 361 85 87)	Zurich
Apr 26-30	Lloyd's of London Press: International Maritime Seminar on Law of Collisions (01-353 1000)	Southampton
Apr 28	Arab-British Chamber of Commerce: Focus on Saudi Arabia (01-628 1249)	Carlton Tower Hotel, SW1
Apr 29	IPS: Electronics — the industrial buyer's guide, (0990 23711)	Montreux
May 4-6	IPM: London Personnel Management Conference (01-948 9100)	Carlton Tower Hotel, SW1
May 4-8	Institute of Metal Finishing: Annual conference and exhibition (021-622 7287)	Royal Lancaster Hotel, W3
May 7	City Seminars: Financial futures—Setting up a futures operation (01-628 3883)	The Old Ship Hotel, Brighton
May 11-12	FT Conference: Gold and the International Monetary System (01-621 1365)	Carlton Tower Hotel, SW1
May 11	Oyez IBC: SSAPs Accounting standards in practice (01-242 2481)	Montreux
May 12	The Textile Institute: New dimensions in knitted fabrics (061-834 9457)	Holiday Inn Hotel, Leicester
May 13-15	Gordon Simmonds Research: Efficient retail management in the changing 1980s environment (01-240 0256)	Grand Hotel, Eastbourne
May 14	Dun and Bradstreet: Purchasing from abroad—for commercial executives buying from abroad (01-247 4377)	Cafe Royal, W1
May 17-21</		

Geoffrey Charlish on new moves to sighted robots in the factory

Vision from lab to shop floor

IF TOMORROW'S automation systems, ranging from robots to automatic inspection machines, are to develop in terms of flexibility and versatility, they will have to be able to see what they are doing.

A number of research units in the UK are examining the problem and some of the work was discussed at a recent London conference organised by IFS and chaired by Professor Bruce Batchelor of the University of Wales Institute of Science and Technology (UWIST).

In an article in *Sensor Review* not long ago, Professor Batchelor pointed out that although vision systems work in the laboratory, their transition to the shop floor is another matter. "It often fails to happen," he said, "for reasons totally disconnected with the technical aspects" — an indirect reference to problems of unfamiliarity, investment conservatism and labour relations difficulties that dog UK industry.

Batchelor is trying to ease implementation by making industry more familiar with the possibilities. He has described the design of vision systems as "rather like making a choice from a Chinese menu" — a reference to the availability and suitability of equipment for visual sensing. UWIST has set up a laboratory in Cardiff for project work on a time-charged basis and Professor Batchelor acts as a consultant in conjunction with British Robotic Systems of London.

Photocells

At the conference he described some of the prospects for product inspection using, for example, processed images from monochrome line-scan cameras. These use a line of tiny photocells past which the product is moved; so that at point by point, line by line image is fed into a digital semiconductor store.

Having "captured" the image, it can be processed to reveal faults, dimensional errors and other features quite automatically; they can also be counted.

For example, grey-scale

thresholds can be set so that a rather obscure crack in glassware can be "seen" in appropriate illumination and a reject mechanism activated.

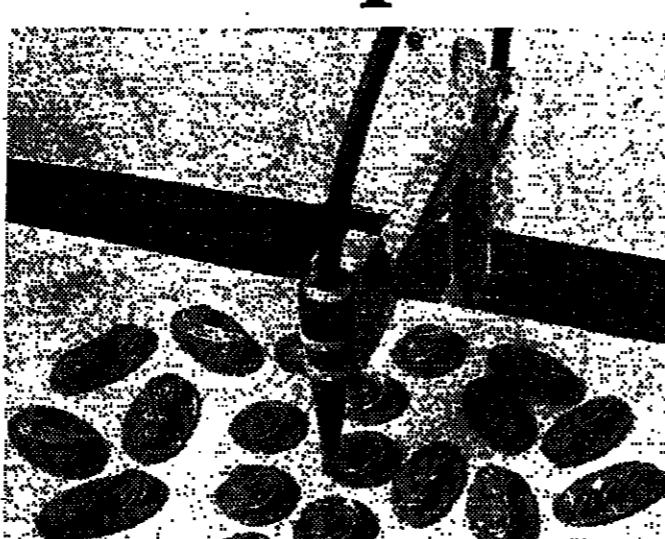
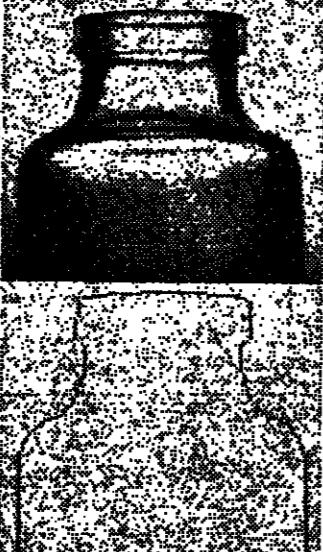
Almost any engineering or natural product can be looked at in this way — UWIST has even been asked to devise a foolproof method of categorising wine bottle corks according to the number and distribution of the spots.

By suitable computing, image edges can also be measured for straightness, radius of curvature or tilt from the vertical.

An unusual example of robot vision, developed by Paticentre of Cambridge was provided by A. J. Cronshaw. An (unmanned) confectionery manufacturer had the problem of applying lines, swirls, chevrons and other piped chocolate patterns to the tops of chocolates on a conveyor belt.

The suggestion, which proved correct, was that a small robot decorating arm could produce a more consistent result than a human operator.

A television camera is placed before the robot arm



Based on analysed images from a TV camera placed further back down the line, this robot is able to decorate precisely the tops of chocolates—and get it right every time

over the conveyor. Each chocolate's image (there are eight types) is digitised and stored so that its location on the conveyor, its centre of mass and the angle of its sides (if triangular or rectangular) or its major axis can all be computed from the stored data.

The data also defines the type of chocolate (say, a hazelnut swirl or a walnut truffle). The correct instructions can therefore be compiled rapidly and fed to the robot's drives. The robot correctly orients itself to grasp the item and presents it for several machining operations.

Justified

Ted Johnston, a consultant to Hadron Drysys, described a system with a similar purpose, in this case the identification of large components suspended on a moving overhead conveyor. A vertical line scan of 128 pixels/line is used in 2 second sweeps across the image area, although the speed can be synchronised to the conveyor speed. Outline

shapes of each passing component are derived as a unique code that will tell, say, a paint spraying robot what pattern of spraying to employ.

One of the applications

tackled by British Robotic Systems required the visual system to recognise any one of about 5,000 small pieces of pipework and then present each of them on an indexing table to a robot. The robot correctly orients itself to grasp the item and presents it for several machining operations.

Peter Heywood of BRS emphasised that the robot or visual system alone could not be justified; together, they form a cost effective system with built-in flexibility for the future.

But there is a big difference, said Heywood, between what can be done in a laboratory and its practical realisation on the shop floor. Robustness is the key of people and systems

Microwave link offers cheaper communications

THE HOME OFFICE has granted GE (U.S.A.) a demonstration licence for its Gemlink microwave fixed link equipment operating in the 21 to 23 GHz frequency band.

Equipment has been offered in this private users' band at various times but has not been cheap and has really only attracted users with large amounts of information to transmit.

GE (U.S.A.), by employing a solid-state Gunn diode oscillator as the microwave source and operating at low power has kept the cost down to \$2,250 for a system that will transmit and receive at 9600 baud.

Using a straight receiver this gives a range of about 3 km, with the superhet version about 8 km. The equipment is small and unobtrusive; it weighs only 10 lb and looks a little like a spotlight. More sensitive receivers can be provided.

Two versions are designed at the moment, one intended for sending television channel (with slightly less range) and the 9600 band unit for control/telemetry applications. This can accept four signal formats: tones, pulse width modulation, frequency shift keying and digital encoding.

The company says it is



Testing a Gemlink system at GE's Owensboro, Kentucky, plant

offering these systems as a cost-effective alternative to dedicated lines and to other systems using lasers and infrared techniques.

At the moment, these bands are relatively unchurched says GE. Since no cable is required, no wayleave problems exist so that in urban areas

point-to-point communications between the dishes, mounted on rooftops of business premises, opens up an interesting prospect, particularly in the banking and financial world.

In fact, the band will support about several hundred channels. Because the range is restricted to a few kilometres, presumably each town could use the same set of channels without mutual interference. Companies that at present have buildings in a town that talk to each other over dedicated phone lines (at less than 9600 baud capacity) might well find the system of interest at \$2,250.

GE (U.S.A.) is working on a high speed data system that can handle multiplexed signals over a 2 km range. It will be available in the summer. Applications might include connection of remote terminals to mainframes in factory computer systems, or perhaps CAD, and use as a cost effective trunk line between private PAXes in different buildings. More on 01-402 4100.

GE (U.S.A.) is working on a high speed data system that can handle multiplexed signals over a 2 km range. It will be available in the summer. Applications might include connection of remote terminals to mainframes in factory computer systems, or perhaps CAD, and use as a cost effective trunk line between private PAXes in different buildings. More on 01-402 4100.

\$1,400 each. The company says that the price could drop to \$100 when production volumes reach 100,000 discs annually.

Recently Drexler announced plans for a \$7.8m plant for expanded production. A new pilot facility will be established by the end of 1982, with an initial capacity of 1,000 discs a month, expandable ultimately to 10,000 per month as demand grows.

GEOFFREY CHARLISH

Surface checked by laser

LASERSURF, a development of Diffracto in Ontario, Canada, is being made available in the UK by Optical and Mechanical Development Company, Enbridge, Kent (0732 864111).

The surface of parts to be inspected are illuminated by a laser beam and the reflected illumination received by a photodiode array.

The complex scattering pattern of the light is related to the surface roughness and subsequent electronic processing decodes the surface roughness information, displaying the roughness in accepted units. The electronics can also pass an accept/reject signal, based on a pre-set threshold, to a downstream sorting gate.

Compared with stylus-based equipment, LaserSurf has the advantage that it checks either static or fast moving parts. Furthermore, since it is non-contacting, there is neither probe wear nor trace marks.

Membrain builds a faster tester

SPEED, CAPACITY and versatility are the keynotes of a new printed circuit board tester from Membrain, MB 3333S. The company's previous hybrid tester (that is a machine able to cope with both computer-like digital circuits and analogue circuits of the kind found in telephony and radio), could offer 1199 digital test points and a further 327 for analogue work. The testing rate for digital patterns was 500 kHz.

In the new machine these three key figures have been raised to 2292, 859 and 2 MHz respectively.

The machine, like its predecessor, is an "in-circuit" tester. Via a "bed of nails" contact platen the interconnections on either assembled or bare boards can be checked, verifying that the correct components have been fitted and properly oriented. Computer diagnosis identifies incorrect components and tracks.

Such a test ensures that, if powered up the board will not be damaged. Then, tests with power-on can check that each active device functions correctly.

CONTRACTS AND TENDERS

ARAB REPUBLIC OF EGYPT GREATER CAIRO WASTEWATER PROJECT SUPPLY OF MECHANICAL AND ELECTRICAL PLANT AND EQUIPMENT

The Organisation for the Execution of the Greater Cairo Wastewater Project (CWO) invites British manufacturers and suppliers of mechanical and electrical equipment to express interest in tendering for the Greater Cairo Wastewater Project.

CWO is an organisation set up by the Ministry of Housing and Reconstruction of the Arab Republic of Egypt to implement the Greater Cairo Wastewater Project, a major scheme for rehabilitating, augmenting and extending Cairo's wastewater system. Design work for the first stage of the project comprising tunnels, major pump stations, culverts and a treatment works all on the east bank of the River Nile and having a total estimated construction cost of about £800 million is now well way. Consulting Engineers for the work are AMBRIC, a joint venture between UK firm Mincle & Partners and John Taylor & Sons and US Consultants Camp Dresser & McKee and Black & Veatch International (in association with Egyptian Consultants, Egycom). Foreign currency requirements for the first stage east bank work will be met from a £50 million grant from the British Government and a £100 million loan from the Midland Bank and Samuel Montagu & Co. Ltd, backed by ECGD.

It is envisaged that tenders will be invited later in the year for the manufacture, works testing, delivery, erection and commissioning, including training of operatives of the undermentioned items of mechanical and electrical equipment for sewage applications. All associated motors, switchgear, cubicle starters, cabling and control gear will be included as appropriate with each item.

Item No. 1 — Rotodynamic Pumps in two Stations:

Dry chamber uncheckable sewage pumping equipment, pipework, valves, penstocks, stairways, platforms, etc.

14 No — Units of capacities up to 3500 l/s each.

Item No. 2 — Archimedean Screw Pumps in eight Stations:

Pumps, gearboxes, penstocks, etc.

70 No — Units of capacities up to 2350 l/s each.

Item No. 3 — Positive Displacement Pumps in three Stations:

Reciprocating pumps, gearboxes, pipework, valves, platforms, etc.

30 No — Units of capacities up to 160 l/s each.

Items 4 to 11 below are required for a wastewater treatment plant of capacity 1,000,000 cmd (maximum throughput 210000 cmd).

Item No. 4 — WWTP Inlet Works Machinery Installation:

Screens, detritors and all ancillary equipment.

24 No — Screen Units to pass average flow of 1.16m³/s each.

8 No — Grit collector units.

Item No. 5 — Primary Sedimentation Installation:

Circular tank centre feed equipment and all ancillaries.

32 No.

Item No. 6 — Secondary Treatment Installation:

Fixed surface aerators with draught-tubes, gearboxes, etc.

160 No — Units of 75 kW capacity each.

Item No. 7 — Final Settlement Installation:

Circular tank centre feed equipment and all ancillaries.

32 No.

Item No. 8 — Chlorination Installation:

Motoring pumps, pipework, injection equipment, etc.

2 No — Sets of equipment each of 22,500 kg/d capacity.

Item No. 9 — Sludge Thickening Installation:

Circular tank centre feed equipment and all ancillaries.

24 No — Units to pass average flow of 3300 cmd each.

Item No. 10 — WWTP Electrical Power Distribution Installation:

HW switchgear, transformers, LV switchgear, standby generator, cabling, etc, for total installed capacity of 20 MW.

4 No — 4 MW sub-station installation each.

2 No — 2 MW sub-station installation each.

Item No. 11 — Instrumentation and Control Installation:

Centralised monitoring equipment for process and plant.

Interested suppliers or manufacturers or groups of suppliers or manufacturers are invited to express interest and to provide the following detailed information:

(a) Item(s) for which they wish to tender;

(b) capability to supply the plant and equipment indicated;

(c) previous contracts of similar nature and size undertaken by the company or group of companies; and

(d) the financial standing of company or group of companies.

Details should be submitted not later than 30th April 1982 to:

AMBRIC
P.O. Box 2365
Abu Square
Cairo, ARE

Taylor Bird & Partners
Floor 2, Greco House
10 Greco Place
London SW1P 1SB

A further copy should be sent to P.O. Box 2365, Abu Square, Cairo, ARE, marked for Chairman A. Sawaf, CWO.

SOMALI DEMOCRATIC REPUBLIC

MOGAMBO IRRIGATION PROJECT

CONTRACT NR. M2
IRRIGATION, DRAINAGE AND FLOOD PROTECTION WORKS
PREQUALIFICATION AND REGISTRATION
OF PROSPECTIVE TENDERERS

The Mogambo Irrigation Project will develop irrigated agriculture over a net area of about 220,000 ha using water abstracted from the Shabelle River and from a part of a 2200 km² drainage basin of about 5000 ha.

The construction of most of the works will be the subject of international competitive tendering under the terms of agreements for financial aid negotiated between the Somali Democratic Republic, the Kuwait Fund for Arab Economic Development, and the International Fund for Water Development and Sanitation, according to which the works are to be the subject of an advance Contract to be advertised in Somalia shortly.

The tender documents are in the course of preparation for this contract, which will be let to a prequalified tenderer with a view to construction commencing early in 1983. The Works generally comprise:

- (a) Supply canal and distributary canal system to supply the irrigated areas.
- (b) Pump station at the head of the supply canal.
- (c) Canal structures, including geyphons under the Galib/Kiessyo road and the main rail line, check regulators, distributary cutters, pumping and other canal structures.
- (d) Infield works comprising water courses and associated structures, land forming, surface drains, and surface drain culverts.
- (e) Drainage channel system comprising outfall drain and main collector drains.
- (f) Drainage pump station.
- (g) Canal structures including road culverts, collector drain junctions and all other drain structures.
- (h) Sprinkler pump station together with distribution system.
- (i) Flood protection bunds and remodelling of existing flood relief channels.

The design and supervision of erection of the pumping plant and gates and other water control equipment will be the subject of nominated sub-contractors.

PREQUALIFICATION OF TENDERERS
Contractors who wish to be prequalified for the above Contract should submit their names and addresses to be received by the Consultant before 1st May 1982. They will be sent further information about the Contract and requests for the information needed in the prequalification procedure.

CONSULTANT
The Consultant, to whom applications for prequalification and registration should be sent, is:
SIR M. MACDONALD & PARTNERS
DEMIETER HOUSE
STATION ROAD
CAMBRIDGE
CB1 2RS
UNITED KINGDOM

who will acknowledge all applications and, in due course, supply further particulars.

LANGUAGE
Submissions of original documents, or copies thereof, which are not in English, should be accompanied by English translation.

Signed: THE GENERAL MANAGER
MOGAMBO IRRIGATION PROJECT
P.O. BOX 102
MO

FINANCIAL TIMES SURVEY

Monday April 5 1982

Electronic Components

The electronic components industry is performing well despite the recession.

The U.S. domination of the industry has been seriously challenged by Japan while West European countries still lag behind. Developments in technology show no signs of slowing down during the next few years

Horizons widen for new markets

By ELAINE WILLIAMS

MEASURED AGAINST the backdrop of the world recession, the electronics industry's growth is still impressive. It has managed to maintain a growth rate of about 11 per cent a year in the 1980s at a time when other industries have declined sharply.

It continues to make strides in technology, some of which will be shown at the All Electronics Show at the Barbican later this month—and many new markets are opening in areas such as telecommunications. Industry and commerce have realised that electronics equipment is vital to maintain a competitive edge or simply to survive the cold wind of the recession.

The computer industry still represents the largest customer for the electronic components industry, taking about 25 per cent of the total production of integrated circuits.

Within this sector, the fastest growing segment is small computers which find applications as personal business machines or are integrated as part of other industrial or commercial systems. These small desk-top-sized computers are linked to the growing interest in office automation, which is mainly centred around word processing systems.

At present, the market pen-

etration of word processing systems is relatively small but is estimated to be growing at a rate of more than 20 per cent a year, reaching a value for Western world word processing equipment of \$5.33bn by 1985.

Coupled with the evolution in the office is the increased demand for telecommunications, resulting in another growth sector for electronic components. The western world is now going through a transition from outdated electromechanical telephone systems to completely electronic ones.

More components

This is also opening up new markets in data communications equipment, connections to computer systems and new telephone gadgets, all of which need components.

Despite the recession throughout the industry, the demand for applying electronics to automatic industrial processes is increasing. Companies have realised that robots and other automated production systems are vital to increase productivity and lower costs.

In Europe, industrial applications for electronics represent one of the largest sectors for the industry and is growing

at an annual rate of about 12 per cent.

The market for consumer electronics is not growing as fast as some other sectors because of the recession. Consumer goods such as calculators and digital watches seem to be levelling off in sales although video games and home video systems still show substantial growth.

The introduction of the first microprocessor—a computer on a chip—in the early 1970s marked a new phase in both electronics and computing. It lowered the cost of computing to a level where it could be employed in almost any application imaginable.

Hence its appearance in equipment as diverse as electronic games, aircraft navigation systems, aids for the disabled, heart pacemakers and industrial controls.

Technical developments over the next few years will continue to centre on squeezing more individual components on to the tiny square of silicon probably going beyond 1m elements per silicon chip this decade.

Microprocessors will become more complex and be able to store more data on the same chip instead of requiring a separate memory circuit—making it truly a complete computer on a silicon chip. Today the largest semiconductor memories—used for storing large amounts of information—are capable of holding 64,000 bits of information. Semiconductor companies are now set to leap to memories capable of handling four times that amount of information.

Designers are already reaching the limits of existing semiconductor production technology

which is based on photolithography—a highly sophisticated photographic process.

Integrated circuits are built up in layers on the silicon base. Parts of the silicon is etched away by acids while other areas are implanted with impurities to give the circuits the required electrical characteristics.

Optical methods

Today each layer is aligned above the previous one using optical methods. However, if circuits are to become more complex the size of each individual transistor or element has to shrink below the size at which the optical methods are accurate. So companies are now looking at ways of using X-rays or electron beams to build up the circuits.

Although the market for electronic components is growing at a healthy rate, it costs a lot of money to keep in the semiconductor race. Technological developments are moving ahead so fast that companies need to

re-equip constantly with the latest design and production equipment.

The complexity of modern silicon chips means that it is impossible to design them without the aid of sophisticated computers and a factor limiting the expansion of production facilities has often been the delay in delivery of the latest machinery to make the circuits.

The ratio of investment to total turnover in the industry has risen from 10 per cent to more than 15 per cent which is higher than in any other industrial sector.

If we consider Immos, for example, the UK semiconductor company set up under the former National Enterprise Board, it has required an investment of over £50m to begin manufacture of its microprocessors and other circuits and still needs more money if it is to keep abreast of developments.

It has been estimated that the seven leading U.S. companies in this field spent about \$900m in 1980 on new equipment which was 40 per cent more than the previous year.

Industry observers feel that such costs coupled with the intense competition in the market will encourage an acceleration of mergers and takeovers which has been a feature of the industry over the past five years or so.

This, observers say, will lead to the emergence of a dozen or so electronics giants—rather like the seven major oil companies—which could control as much as 60 per cent of the worldwide electronics market.

For some years now a number of industrial groups have shown the potential to be classed as prototypes of these giants. Apart from IBM, which has already achieved such status, AT & T in the U.S., Philips and Siemens in Europe, Toshiba, NEC and Hitachi in Japan have the structural characteristics which could one day set them on this level.

However many multinationals such as oil giant Exxon, Honeywell, and United Technologies are among companies which have taken over electronics concerns because of the industry's growing importance.

Governments, too, have felt the need to influence the direction of national electronics industries. Several Western European countries have mounted programmes aimed at closing the technology gap with the U.S. and Japan.

Initiatives include plans in Germany to support semiconductor research and development providing grants of DM 143m (£33.26m) from 1978 to 1981.

The German Government is now considering a further injection of money.

In France efforts have been aimed at creating a strong indigenous electronics components industry with state investment of FF 1600m (£53.52m). Joint ventures with U.S. companies such as Motorola and Harris and National Semiconductor have also been encouraged.

In the UK more than £120m has been dedicated to industry support programmes apart from the money spent on setting up the Immos venture. According to the Electronic Components Industry Federation there is also state support for specific components such as optoelectronics and a rationalisation of industry sectors such as resistors to increase competitiveness.

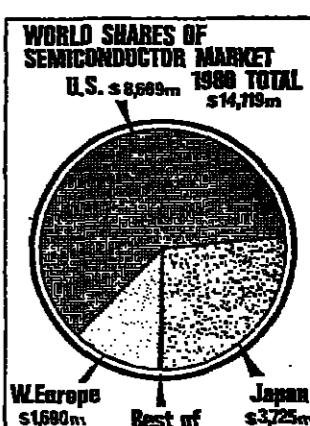
But both the U.S. and Japan, which emerged from a four-year catching up exercise in 1980, are now poised to take a further technological leap. U.S. companies have found a measure of support for developments under the U.S. defence spending budget through the very high speed integrated circuits programme.

MITI guidance

Meanwhile, Japan's private companies are being guided by the Ministry of International Trade and Industry (MITI) to produce the fifth generation of computers over the next decade.

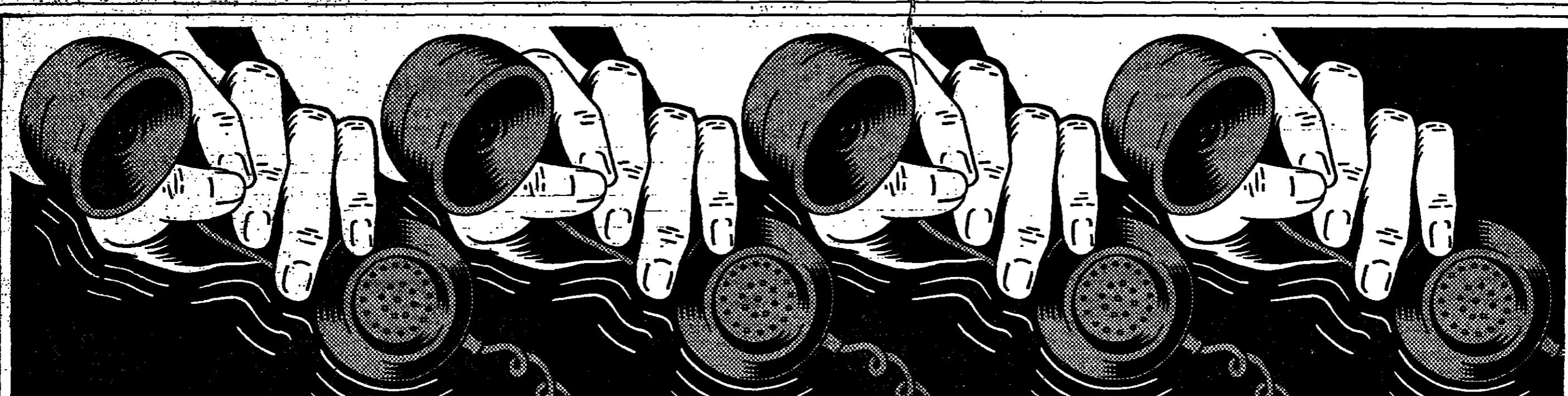
Even Third World countries such as Taiwan, Singapore and Hong Kong, which concentrate on consumer products, are looking to improve their technology base.

Taiwan and Korea were attractive as offshore assembly locations for integrated circuit manufacturers because of cheap labour.



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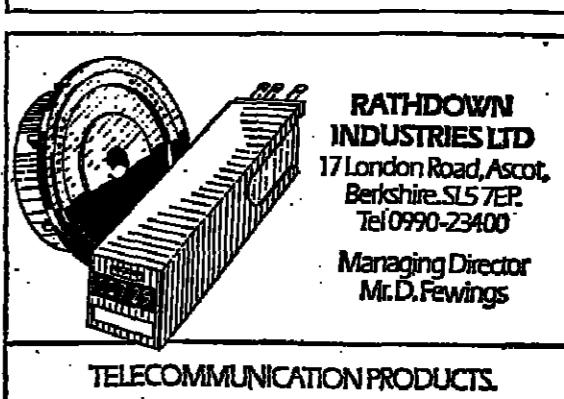
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ELECTRONIC COMPONENTS II

MOTOROLA

Claims widest range

MOTOROLA CLAIMS to have the broadest product range of any electronics component manufacturer in the world. The company's "semiconductor product sector" as it was renamed last year, had sales last year totalling about \$1.3bn.

The company is a major manufacturer of discrete components: transistors, resistors and the like. As other component manufacturers have dropped out of this less glamorous end of the component business, Motorola has increased its market share, so that although the discrete market is not growing, Motorola's sales are.

In integrated circuits, Motorola is the top U.S. producer of 64k RAMs, and second only to Intel in microprocessors. Both markets are highly competitive and Motorola, as much as any other producer, has suffered from the recession.

Through its recent acquisition of Four Phase Systems, a computer manufacturer, Motorola is entering the data processing market. At the moment, however, the corporation's chief interests are in communications equipment (with sales of over \$1bn), semiconductors and other types of electronic systems.

Louise Kehoe

NATIONAL SEMICONDUCTORS

Leaders in circuits field

WITH INTEGRATED circuit sales of an estimated \$670m in 1981, National Semiconductor fell from second to third place among U.S. producers. The company's earnings have been severely reduced by economic pressures and dropping memory prices over the past year. Another problem for National has been its disqualification as a supplier of some military products due to alleged failure to comply with Department of Defense production and testing rules. National is, however, a dominant supplier in several market sectors, notably the linear circuit market. In bipolar technology, National is a leader, and it is also developing a strong position in CMOS, the low power technology that is widely expected to become a major challenger to today's MOS (metal oxide semiconductor) technology.

In microprocessors, National is soon to begin volume production of its new 16-bit microprocessor. The device is believed to be the most advanced of its type, but National will be up against stiff competition from already established suppliers.

L. K.

INMOS

Ram chips to be made at Gwent

INMOS, the British state-backed producer of mass-market microchips, is shortly to start making 64K Random Access Memory (RAM) chips at its new factory in Gwent, South Wales.

Inmos was set up in 1978 by two Americans, Dr Richard Petritz and Dr Paul Schroder, and one Briton Mr Ian Barron with substantial backing from the National Enterprise Board. Government backing for Inmos is now nearly £100m, in equity, guaranteed loans and grants.

The National Enterprise Board, now part of the British Technology Group, is drawing up plans to sell a substantial part of its 75 per cent stake in Inmos.

Sales at Inmos are running at over \$1m a month largely in 16K RAM chips produced in the U.S. Inmos strategy is to offer high performance chips which can command a premium price.

Inmos' new 64K RAM chip faces strong competition from established semiconductor giants and there is already a number of Japanese companies sampling the next generation of memory chips, the 256K RAM.

Inmos' microprocessor, which it calls a "transputer" will not be available until 1984, although the company is to start talking to potential customers next year. Inmos claims the transputer will be a major technological jump with sufficient attraction to wean companies away from standard microprocessor systems in which they have a substantial investment.

Jason Crisp

Trade flows become a political issue

THE "JAPANESE threat" to U.S. dominance of the world market for electronic components is no longer simply an industry issue. As the magnitude of the problem has emerged, concern has spread into the political arena to be debated in the U.S. Congress, studied by the Department of Commerce and possibly to be acted upon directly by the President as a matter of national security.

Can the Japanese repeat their successes in the automotive, steel, textile and consumer electronics markets to take over much of the world market for semiconductor devices? Many in the U.S. believe that they can, and will, unless something is done to stop them.

U.S. imports of Japanese components, in particular memory chips, have become an important factor in U.S.-Japanese trade negotiations. The U.S. industry wants "reciprocity", that is, they want the Japanese to allow free access to their domestic market.

Currently, trade barriers, both official and informal, prevent U.S. firms from establishing themselves in the Japanese market-place, according to a study sponsored by the Joint Economic Committee of Congress.

While the majority view of the U.S. industry, as represented by the semiconductor industry association, strongly favours open trade between the U.S. and Japan, there is some pressure for protectionist measures in the U.S., should trade negotiations fail to produce compromise on the part of the Japanese.

Motorola, one of the largest U.S. semiconductor producers, recently called upon the Department of Commerce to make an "informal" study of Japanese pricing policies in the 64K RAM (Random Access Memory) market, with a view to possible anti-dumping action against Japanese producers of memory chips.

Others are hopeful that the President may act under a little known national security provision of the trade code to limit imports of 64K RAMs as a strategic product.

U.S. chip makers are in a fighting mood. The combination of general economic pressures and increasing Japanese competition in the semiconductor memory market sharply reduced the 1981 profitability of every major U.S. chip manufacturer. Throughout this recession, however, U.S. semiconductor manufacturers have steadily maintained high capital spending.

A previous business downturn in 1974-5 taught them a hard lesson. In that recession, U.S. firms stopped expanding their production capabilities. When the market turned up, the U.S. companies were not able to keep up with demand, and Japanese competitors stepped in to fill the gap in supply and demand. Then, Japanese suppliers established a foothold in the U.S. and European markets that they have never relinquished.

Despite the strong statements of Mr Norris and other industry figures, some analysts believe that the Japanese threat has been greatly exaggerated.

A recent report by San Francisco investment bankers Ham-

brecht Kehoe, points out that the Japanese thrust has been principally focused on a narrow segment of the market: monolithic oxide semiconductor) memories, and CMOS (complementary metal oxide semiconductor) static memories.

For many years, U.S. semiconductor chip makers competed with Japanese suppliers without concern. U.S. dominance seemed invincible. But when Japanese suppliers "bought" 40 per cent of the 16K RAM market, using what the Americans term predatory pricing tactics, attitudes changed.

"With the 16K RAM they had a field day because it was the highest volume circuit ever produced. This collapsing price situation has now carried over into the (next generation) 64K RAM area pre-empting the 64K RAM going through its normal experience curve in pricing," John Welty, president of Motorola said at a recent industry meeting.

"It takes a reasonable amount of profit for the semiconductor

Japan v. U.S.

LOUISE KEHOE

industry to fund research and development on newer, more sophisticated integrated circuits," Mr Welty continued. "While our 64K RAM customers may be getting a bargain on products they buy today, they are really mortgaging their future."

A somewhat different view is expressed by Robert Noyce, vice-chairman of Intel. "Limiting the imports of one product won't solve any problems," he says. Mr Noyce, in his role as chairman of the semiconductor industry association, has been active in the formulation of a scheme to co-operate in funding basic research in semiconductor technology at U.S. universities.

He views this as a solution to two of the underlying problems of the U.S. semiconductor industry: the rising cost of research and development and the shortage of electronics engineers.

Another co-operative venture, with more immediate commercial goals, has been proposed by Control Data Corporation. Last month, the company's chairman, William C. Norris, hosted an industry meeting at which he presented his idea to form a research and development corporation to be funded jointly by U.S. computer and semiconductor companies.

Such a proposal is revolutionary in the U.S. since it would almost certainly require changes in anti-trust regulations. Mr Norris maintains, however, that it is essential to the survival of the U.S. semiconductor industry.

Despite the strong statements of Mr Norris and other industry figures, some analysts believe that the Japanese threat has been greatly exaggerated.

A recent report by San Francisco investment bankers Ham-

Growing but still costly control technology

TRANSDUCERS—in journalistic terms—is a synonym for sub-editors. These are the people who translate the incomprehensible language of the writers into a language suitable for English consumption.

In electronic terms the transducer converts electrical signals via telephone, earpieces or loudspeakers to sensors to measure temperature, pressure, failure in moving machinery, cracks in walls, fire detection and such things.

It is a large, growing and, at present, a rather expensive industry—at least, if you need transducers. But as the revolution in electronics proceeds prices should fall.

It is, however, a fragmented industry with many small companies in the field and the larger companies producing transducers for their own use.

The entire Western world is committed to transducers—the UK is not lagging and is producing some of the best technology in the field.

Ancom of Cheltenham provides a selection of specialist temperature and humidity orientated products and is successfully exporting to Japan.

The company's range of two and three pin thermocouple connectors with a wiping action ensuring homogenous contact at all times includes 10 compensated colour coded thermocouple types in standard and miniature sizes.

The same company has also announced a complete range of temperature measurement and control hardware systems which includes bench top, panel mounting and hand-held thermometers and relative humidity measuring instruments. Included is an energy limiting temperature controller and an against touch, solid substances

eight channel alarm scan unit. There have been problems solving measurement and switching problems but Rhoappear of Oxted, Surrey, appears to have come up with some answers with its new range of ultra-low thermal electro-magnetic relays.

Its Series 3400 relays are designed as input devices for low level switching applications such as data acquisition systems, process controllers and monitors, data scanners, multiplexers and digital and analogue multimeter recorders.

In Germany, Helmut Mauell

Transducers

MAX COMMANDER

(D5604 Neviges, AM Rosenhugel), offers a complete control room hardware system, including all connections, panels, display switching and control elements. The interactive mimic display is of high quality.

Mauell's mosaic control panel consists of a metal section framework which can be assembled into a lattice grid. Metal or plastic tile modules are fixed to the framework by hair springs. The grid/tile network can be assembled to form a flat or curved surface. Three sizes are available.

As an addition, Mauell has a wide selection of discrepancy and toggle switches, and push buttons, with or without illumination, for auxiliary circuit operation. The units are fully sealed and offer protection against touch, solid substances

and humidity. Norsem Optoelectronics in Hartlepool, Cleveland, is well known for its expertise. Now it is pinning its hopes on the NDM 305 3½ liquid crystal display panel meter module.

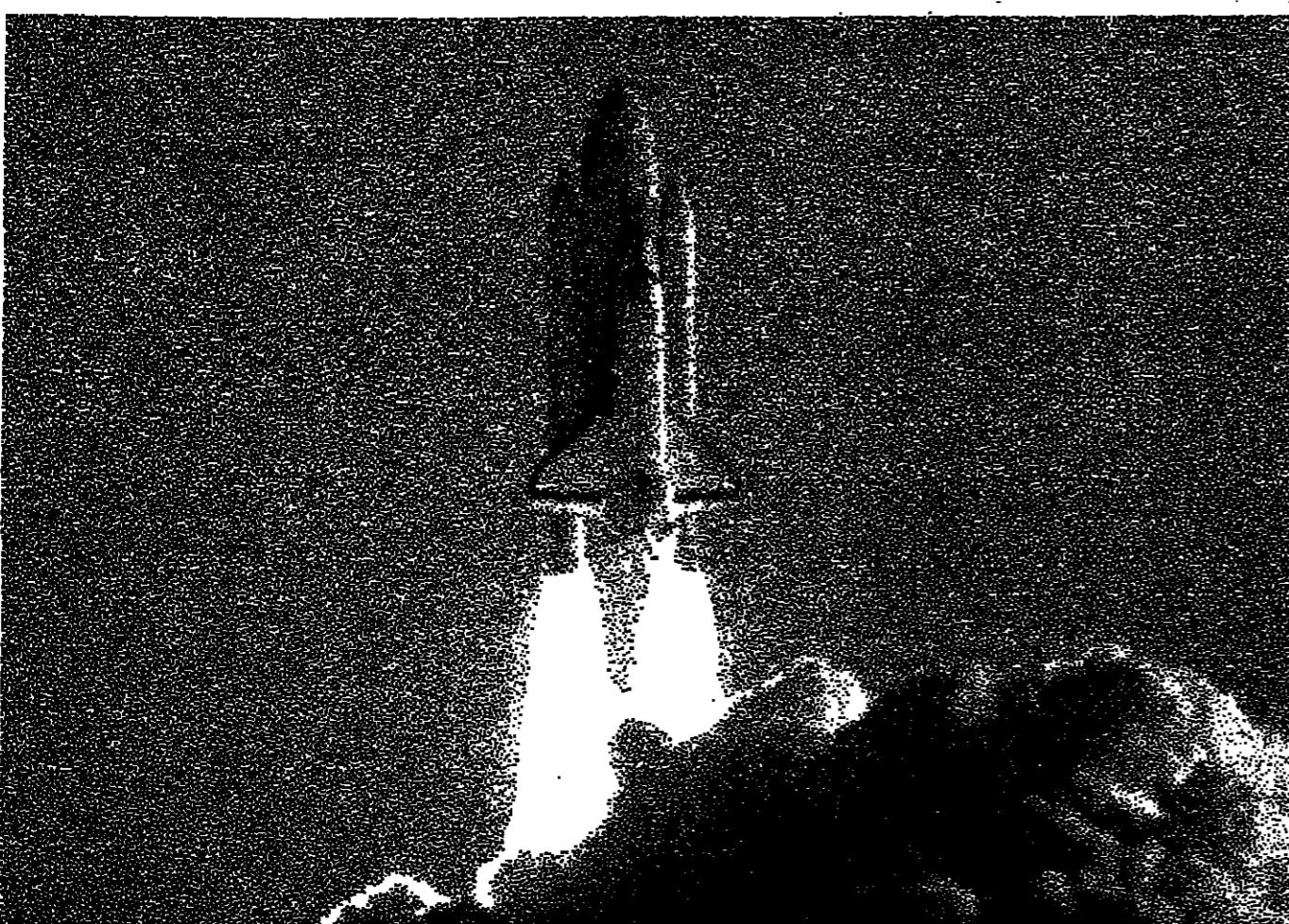
Norsem has also obtained a number of franchises for optoelectronics including the UK distributorship for BBC LCDs and also the introduction to Britain of membrane switch panels from Luminescent Systems Inc.

In the near future digital data encryption techniques will play an increasingly important role in the financial world. Brokerage transactions, fund transfers and almost all City style movements of money or documents will need special security systems.

Pronto Electronic Systems in Essex is offering Western Digital's WD2001/2002 series of monolithic data encryption devices. Data can be encrypted and decrypted for later use and stored in a coded cipher free from unauthorised entry.

Cryptography for beginners is a kit offered by the company for people unfamiliar with this technology. The primer kit allows experimentation and exploration of DES cryptography. It includes a programmable cryptographic PCB interfacing, an assembly, wiring and operations manual, a cryptographic primer and relevant documentation.

The PCB accepts baud rates from 50 bps to 19.2k bps the user inputting the 64 bit key word from a computer terminal. The board contains a dual port encryption device with a LED display for status and error message.



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ELECTRONIC COMPONENTS III

Overall policy is lacking on semiconductors

WESTERN EUROPE is the world's third largest market for semiconductor products after the U.S. and Japan. Yet its own indigenous manufacturers have managed in recent years to cover only about half of its requirements, with most of the rest being supplied by American companies.

According to Dataquest, a leading U.S. market research house, Europe accounted for 20 per cent of the world market for semiconductors last year, valued at \$13.5bn, while producing 9 per cent of world output. The European market's share of the total is expected to fall to 12 per cent this year, reflecting a strong surge of demand in Japan—though Europe's production is forecast to edge up to 10 per cent.

Europe can also boast only two companies in the list of the top ten semiconductor manufacturers. They are Philips, the Dutch group whose geographically-diversified operations include Signetics, a sizable U.S. company acquired in the mid-1970s, and Siemens, the largest West German electrical and electronics manufacturer.

Redressing the balance has become an increasingly important objective for a number of European countries during the past decade. They are concerned with more than just their adverse trade figures in component supply. Semiconductor technology is now perceived in many European capitals as the main spring of the new electronics revolution and its possession as a determining factor in future industrial development.

Without autonomous capacity in the development, design and manufacture of integrated circuits, it is feared, Europe will be condemned once again to trail behind the U.S. in tomorrow's growth sectors. This anxiety is particularly acute in France. But to date, there is no Europe-wide policy on semiconductors. In spite of efforts by the EEC Commission to win the support of the Council of Ministers for a joint research and development programme, national measures predominate. The only issue on which there can

be said to be common ground is the maintenance of an EEC tariff on semiconductor imports.

The national instruments used to try to promote the semiconductor industry take a variety of forms. These include support for research and development, Government procurement policies, investment grants and subsidies, encouragement of mergers and industrial reorganisation and incentives for foreign investment.

These measures are used in different combinations and in different degrees, in each European country. A brief look at recent developments inside the bigger EEC member states illustrates the considerable variations that

European competition

GUY DE JONQUIERES

exist in the pattern of Government policies and industrial structures.

Britain: None of the major electronics companies, such as the General Electric Company, Ferranti, Plessey or Thorn-EMI manufactures mass-produced "standard" microchips. GEC considered mounting a UK-based joint venture in this field with Fairchild of the U.S., but the proposal was dropped two years ago.

Instead, British companies have concentrated on more specialised semiconductors to be used in specific applications, often determined by their own manufacturing requirements. Ferranti has established a strong position in the growing market for "semi-custom" devices using a technology which it pioneered.

The only UK entrant in the mass-market is Immos, the state-owned venture set up three years ago, in which almost £100m has been invested. Immos plans to make both memories and microprocessors in Britain and the U.S. Commercial production

INTEGRATED CIRCUITS	WEST EUROPEAN MARKET	IC MARKETS IN EUROPE	PLESSEY
End 1981 \$m 1980 +1981	End 1981 \$m 1980 +1981	Percentage	
France 254 640	Germany 675 760 1,445	Military 5 6	
Germany 713 1,445	UK 310 335 595	White goods 4 4	
Italy 179 315	France 280 325 640	Consumer 24 17	
Scandinavia 163 325	Italy 165 175 315	EDP 23 25	
UK 358 595	Scandinavia 160 180 325	Industrial 26 23	
Rest of Europe 253 490	Rest of Europe 230 255 480	Telecom. and communications 18 24	
Total 1,950 3,800	Total 1,630 2,030 3,800	Automotive — 1	
† Estimated.		Plessey International	
McKintosh International.			

Since the mid-1970s, Siemens has made a major effort to expand its operations.

But this progress has been made at a heavy financial cost. Siemens' component operations have plunged deeply into loss.

Italy: The main Italian semiconductor manufacturer is SGS-Ates, part of the Stet national telecommunications group. The product of successive mergers, SGS-Ates has a history of heavy losses and has suffered from lack of firm management supervision from its parent, which continues to subsidise it.

Within the past two years, however, a recovery strategy has been initiated under a new management composed largely of former Motorola employees. It has launched an ambitious plan to return to profit by 1985 by building up international sales of components aimed at telecommunications and consumer electronics manufacturers.

Discussions have been held on the possible purchase by Olivetti of a stake in the company. At a time when even the giants of California's Silicon Valley are feeling the chill wind of recession and intensified Japanese competition, how realistic are Europe's chances of establishing a major role in the world semiconductor industry?

A study published last year by Sussex University concludes that a major breakthrough is unlikely. Though Europe may increase modestly its share of world production, the study forecasts that the industry is likely in future to be dominated by an "oligopoly" of big companies.

Although the study says that Philips and Siemens may be members of this club—along with U.S. and Japanese manufacturers—it suggests that their success will be largely due to their own efforts, not to Government policies. As a result, their main allegation will be to world markets and not particularly to Europe.

FERRANTI

Big share in market for ULAs

THE British company Ferranti has a special microchip which has become one of the fastest growing areas in the semiconductor industry. Although Ferranti now faces strong competition from the semiconductor giants—with many times its capacity in microelectronics—it still has between 30 and 35 per cent of the world market for uncommitted logic arrays (ULAs) worth \$150m.

Demand for ULAs is currently growing at 40 per cent a year and the market is expected to be worth \$1bn within five years. ULAs—known in the U.S. as gate arrays or semiconductor logic—are standard chips which can be customised for a special function at the final stage of manufacture.

The advantage is that it greatly reduces the lead times and cost to produce a new special microchip. Ferranti's ULAs are being used in a host of applications from mainframe computers to dishwashers, from telephone exchanges to cameras. One ULA chip replaced 18 microchips in the tiny Sinclair ZX81 computer, others are used in the Monarch PARK, made by GEC and Plessey.

Dr Alan Shepherd, managing director of Ferranti Electronics expects the company will continue to expand at over 30 per cent because of the very strong demand for ULAs.

In the year ending March 1981 Ferranti Electronics, including its Californian company Interdesign, had sales of \$27.1m, which is 10 per cent of the total Ferranti group's turnover.

Jason Crisp

PLESSEY

Microchip sales rise

PLESSEY SEMICONDUCTORS expects turnover in the financial year to March to have risen by 23 per cent with the sale of 20m units, in one of the most depressed years the semiconductor industry has known.

By value, half of Plessey's semiconductors are exported.

Plessey claims to have a dominant share of the world market for frequency synthesizers used for cable television, which is booming in the U.S. It also reports a significant growth in demand for products used for power controls in consumer products such as cookers, drills and hairdryers.

Other main markets include radar (6 per cent), UK military (11 per cent) and instruments (6 per cent). Plessey says there is a sharp growth in the volume of its custom micro-

chips which account for 15 per cent of sales. Semi-custom chip volume—using cell based arrays—is growing at 180 per cent a year.

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Japan is a significant customer of microchips for fishing boat radar and power controls for hairdryers and underfloor heating. At the height of the citizen band boom Plessey sold 2.5m circuits to Japan to put in the sets.

J.C.

INTEL

Falling prices hit innovation

INTEL is known as the innovator of silicon valley, and is running hard to keep up the reputation. The company aims to introduce over 125 new products this year. Many of these products will not however be in the components area.

Intel has gradually increased its interest in systems markets over the past couple of years and systems now account for about 40 per cent of the company's sales.

Intel's sales of integrated circuits totalled around \$544m in 1981. The company's strength is in microprocessors, where it leads in the 16-bit market with the 8086. Through a wide ranging technology exchange agreement with advanced micro devices Intel aims to share some of the costs of new product development in this area.

Last year Intel opened its "silicon foundry" operation—through which it has entered the market for manufacturing customer designed devices.

Like all U.S. integrated circuit manufacturers, Intel has experienced a slump in profits over the past year, due to the recession and falling prices. Intel reckons to have lost \$100m in earnings due to dropping prices on its memory products. The company has only just entered the 64k Dynamic Ram market, but aims to become a major supplier by the end of the year.

Louise Kehoe

Strong base in ICs

GEC's semiconductor operations were substantially reorganised in 1980 after a planned joint venture to make standard mass market microchips with the U.S. company Fairchild collapsed.

About half MED's business is based in integrated circuits which are increasingly incorporated in sub-assembly hybrids. About 20 per cent of the devices produced are microwave, mainly used in defence applications.

The major markets are industrial, telecommunications and military application, and about a half the company's sales are to other companies in the GEC group. Direct exports account for about 15 per cent of sales.

GEC's semiconductor sales

FAIRCHILD

R & D spending lifted to \$100m

THE GRANDFATHER of silicon valley, Fairchild, was the spawning ground for today's industry leaders. Charles Spork, president of National Semiconductor, Jerry Sanders, president of Advanced Micro Devices, and Robert Noyce, vice-chairman of Intel, are all Fairchild alumnus.

While companies started by ex-Fairchild employees grew to become industry leaders, Fairchild itself fell pitifully behind in semiconductor technology through the 1970s. Fairchild has, however, been very successful in the test equipment market.

In late 1979, Fairchild was taken over by Schlumberger, the oil-services giant. Since then, Fairchild has been going through radical management and structural changes aimed at regaining its strength in electronic components. Fairchild has substantially increased its spending on research and development, and on modernising and expanding its production facilities.

In 1982, Fairchild is expected to put close to \$100m into R and D and \$200m into capital spending. The company's sales are, however, on a steep downward path. Integrated circuit

sales were about \$450m in 1980. This year they are expected to total about \$340m.

The new management team at Fairchild has a long way to go to rebuild Fairchild's reputation as a technology leader. The company's history is one of missed opportunities.

Fairchild was the first company to develop silicon-gate metal oxide semiconductor technology now used by others to build most microprocessors and memory circuits, but Fairchild failed to exploit its lead.

L.K.

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Varelco Ltd

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Cathodeon Crystals Ltd

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Pye Connectors Ltd

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Pye Electro Devices Ltd

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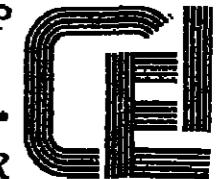
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ELECTRONIC COMPONENTS IV

Armchair vision of brave new world

El Salvador.

It all sounds like an electronic Utopia. You sit in your armchair, turn the on/off button or switch channels—with your remote TV control. So the programme isn't so good—record it on your superb electronic video recorder.

Wife is just returning from the Women's Institute meeting—the garage doors open automatically for her while the latest electronically controlled magnetic lock (when she is inside the house, of course) turns your property into some sort of electronic fortress.

Whether you like it or not, you are an electronics consumer. If you have bought a new car in the past couple of months it might be worth looking under the bonnet and at the dashboard. Recognise anything?

This item was going to be about cable television. How the little box at the end of the cul-de-sac would provide you with 30 or more channels of entertainment and information. I envisaged you sitting in that armchair with a dish aerial on the roof picking up space signals; the latest news from

the satellite.

The modern electronics hobbyist is the successor to the chap in the 1930s who built his model railway system. Then it was a carving knife, sundry bits of metal and a hacksaw.

A model railway layout is still good fun but with a bit of electronic expertise you can simulate the sound of a Great Western steam engine and make it whistle at appropriate points

on the track.

The do-it-yourself electronics market is well catered for by the technical Press. A visit to Smiths or most bookshops provides a bewildering array of electronics magazines.

All are splendidly produced

This is the real armchair stuff. Wade through the Powertrain advertisement with complete electronic kits from £49 to £175 black boxes packed with punch.

Move to Watford Electronics (you will need your glasses for the close five or six point type-setting). The computer corner offers you switches, transformers, crystals, relays, panel meters, transducers, buzzers and books about all of them.

This marvellous magazine follows on with three pages of News Digest looking at the electronic developments of the decade.

First-class headlines: "Tweeters that go cheap," "Electronics, OK," "Sticky Clips," "Video Victory," and a beautiful one—"Grabbed by the Dooleys."

With a headline like that, one just had to read it. It starts off: "Those tireless chaplins at Casio have taken time off from designing BASIC computers and arcade games... and have turned their attention to the music scene..."

Electronics Today is first

class on its graphs and diagrams. One feature had no fewer than 26 diagrams and equations.

The magazine produced a sort of leading article headed "10 Years On" in which it reviewed the dramatic history of electronics since 1972.

The birthday issue charted the course of the news pages, the first calculators, the first digital watches, the first MOS chips, cheap memory, the first Space Shuttle test, bubble storage.

With commendable honesty it records manufacturers' successes, failures and its own gaffes. It ends: "It's an interesting conjecture as to what we shall be able to include in our 21st birthday issue." Any guesses?

So you have every little bit of electronic gadgetry installed. What's left? How about a nuclear radiation monitor? Ideal after the holocaust. Radio and Electronics World says its hand-held monitor will detect gamma radiation, producing an audible click for each quantum of radiation received.

The instrument is of medium sensitivity to allow its use with radiation levels between one milliroentgen per hour and one roentgen per hour.

At Radio and Electronics World says, the unit will find many applications in schools, hospitals, power stations or any branches of industry using radioactivity materials.

But then one gets to the real gritty under a cross-heading which says: "After the Bomb."

Quote: "A nuclear radiation monitor is likely to be a very valuable asset to the survivor of a nuclear war. The levels of radiation are likely to be much higher than that measured with the R and EW monitor."

"It is possible to extend the ranges of this monitor but it would require calibrating against a known source to give meaningful readings."

I'm locking up the house, turning off the TV and video, shutting down the train lay-out and taking the circuit description to my fall-out shelter. The trouble is I do not appear to have a project to build this.

THOMSON-CSF

Defence benefits

THE SOCIALIST planners who have been rethinking France's microchip strategy want a less dispersed industry which is able to invest close to \$1bn between now and 1985. Detailed plans are not available yet but it seems clear that the chief role will be given to Thomson-CSF.

The company, now under state-control, but with an unchanged team, already leads as a supplier to the French market. With total component sales last year of \$580m, three-quarters of these in France, it was one of three French companies to get backing under Giscard for Metal Oxide Silicon (MOS) circuits—and unlike the others was able to spend it all on research and development.

Its bipolar circuit side is being amalgamated with Efdi, a joint venture between Thomson and the Atomic Energy Commission (CEA) which went into standard circuit production under the first components plan in 1978. Thomson-Efdi, as it is now called, which keeps the CEA as a minority partner, expects turnover of \$125m this year and \$400m-plus in 1986.

Its head, M. Paul Mirat, a former CEA man, is an enthusiast with a belief in a special French aptitude for conception and design of microcircuits.

He sets store by the fact that Thomson, unlike Matra and Saint-Gobain which have U.S. shareholding partners in their microchip ventures, is master in its own house.

This leaves it free, despite a licensing agreement with Motorola, to negotiate with other foreign companies—which it is actively doing. The Japanese, says M. Mirat, have proved the benefits of shareholding independence. But Thomson also has another reason to keep to itself—its big defence involvement.

It is preparing to launch a new generation of products, concentrating on areas where it can produce innovative, key components using its own technology. The main lines are telecommunications and video systems, microprocessors and mass consumer products—for instance, components for electronic video cameras.

Being part of a much larger group—the company recently nationalised—Thomson-Brandt is seen as giving the company two big advantages. One is a far-flung marketing network, which helps its efforts in the U.S. and Far East. The other is the group's leadership in French household electricals. Consumer products, M. Mirat points out, are where the Japanese started for their assault on the components business.

David White

"We started with 65 employees producing 50 colour televisions a day. Twelve months later, with over 200 people, we're up to 250 sets a day. Our workforce is excellent and fully lives up to our motto of 'quality first'."

Digital, Hewlett-Packard, Marconi and Ferranti are just some of the companies to have successfully taken advantage of Scotland's unique combination of social, physical and business assets.

Strengthening the ties between their industry and our numerous University research facilities. Enjoying the benefits of our stable labour relations.

And, in their turn, generating more and more sub-contract business every year.

Scotland boasts excellent communications

AS SEMICONDUCTOR chips rapidly become denser, with more and more transistors packed on to a chip, the integrated circuit has become more of a sub-system than a component. So many of the functions of a system are held on a few chips, that the old definitions begin to break down.

Similarly, it is becoming more difficult to describe accurately one electronics firm as a systems house, and another as a component manufacturer. Increasingly, system manufacturers are making some of their own chips, and chip-makers are building some of their chips into systems.

When Intel, generally considered to be a component maker, says that 40 per cent of its revenues come from system products, one might well ask which products it considers to be systems—and which components.

Take, for example, the Intel 32-bit microprocessor chip set. This is one of the most advanced implementations of VLSI (very large scale integrated circuit) design to date. On five chips of silicon resides the power of a mainframe computer. Are those chips components or systems?

Moving in the same direction, Hewlett-Packard, known for its instruments and computers, has developed its own 32-bit chip set and is manufacturing it using some of the most advanced semiconductor processing technology in the world.

"Captive" chip manufacturers—those who produce devices strictly for in-company use—are growing much faster than the merchant market producers. By the end of the decade, the value of devices produced by the captives in the U.S. are expected to be equal to that of merchant market suppliers.

Already the captives make one third of all the integrated circuits (by value) produced in the U.S.

Most of the large captive component manufacturers are computer companies, the largest being IBM which alone is expected to manufacture \$2.1bn worth of ICs this year, making it the largest IC producer in the world.

Another reason for captive

production may be that there is a need for a special "custom" chip not available from a merchant supplier.

If the systems manufacturer designs to chip set, he may want to guard that expensive proprietary design and keep its manufacture inside the company.

One of the advantages of in-house manufacture is that the turn-around time from chip design through prototyping to full-scale manufacture can be controlled and speeded up. IBM has a special production line to the end of the decade, the value of devices produced by the captives in the U.S. are expected to be equal to that of merchant market suppliers.

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ELECTRONIC COMPONENTS V

A world where silicon still dominates

DARWIN WOULD have liked the semiconductor industry. Its principal evolutionary path is clear and fixed. Silicon will continue to hog the stage centre for the foreseeable future, as semiconductor technologists try new methods and improve old ways of cramming even more devices onto a single quarter-inch square chip of the material by increasing the speed of the device but using less power.

Along the way, however, a number of technologies struggle on as "living fossils," obsolete and overtaken by better ways with silicon, but still in existence because they fit a specific market niche.

A good example is a technology called "silicon-on-sapphire," pioneered by Hewlett-Packard, the U.S. electronics giant. Involving the laying of fine silicon tracks on a slice of sapphire, it was pioneered in the hope it would provide a better combination of speed and power than conventional silicon chips.

AMI

Silicon Valley success

RIDING the wave of success in the custom chip business is American Microsystems Inc. While other chip-makers have regarded custom devices as a sideline, 75 per cent of AMI's revenues come from tailor-made circuits. Throughout the current recession in the semiconductor industry, AMI has remained profitable, unlike many of its Silicon Valley neighbours.

AMI offers several different approaches to custom circuit design—from conventional hand-drawn circuits through circuits built up of standard predefined cells, and semi-custom logic arrays that can be "customised" with one or two layers of interconnection that defined how the circuit functions. AMI is also the largest silicon foundry for chips that have been designed by systems manufacturers.

Last November AMI was taken over by Gould, the diversified U.S. manufacturer of electronic and electrical products. According to AMI, the takeover will not change its business plans, and the current management team will stay intact. In Europe, AMI is involved in a joint venture with Voest Alpine, the Austrian steel and engineering group. The companies plan to build a new manufacturing facility in Austria to make custom and standard integrated circuits for the European market.

Louise Kehoe

Designers still strive to improve the performance of each Rivalry between MOS and bipolar processes

FASTER, smaller, cheaper: these aims are always at the top of a semiconductor designer's list. Since the early 1960s it has been the pattern that every two years the complexity of a silicon chip doubles but the price continues to fall.

Semiconductor designers strive to pack the components on the silicon chips closer together because the electronic circuits can then operate more quickly. The electronic signals have less distance to travel. With memory circuits—used for storing information needed for computers, for example—the aim is to cram more storage space in a smaller area.

At present, it is possible to store 64 k bits of information on a silicon chip and most semiconductor manufacturers are now developing memories four times that size which will push the present technology to its limits. Today the tiny elements which are produced by photolithography and chemically etched can be only one micron (one millionth of a metre wide) in size.

In the future the element will be even less than one micron but the industry will have to use X-rays or electron beams to draw the fine lines that define the size of the thousands of transistors on each circuit.

Technical developments in semiconductors still centre around making silicon chips operate faster and consume less power. This means that there is intense competition between the two main processes—bipolar and MOS (metal-oxide-semiconductor) which are used to make electronic circuits.

Bipolar process is generally considered superior for high speed and analogue applications while the MOS technology is used for low power applications such as calculators and digital watches.

conductors.

Why is silicon so useful, and what are the limits to its use which makes research into other materials necessary?

Bardeen, Brattain and Shockley invented the transistor, a solid state device with the ability both to amplify an electric current or act as a

switch in germanium, a material of the same chemical group as silicon.

Germanium is fairly rare—it can be obtained as a by product from smelting zinc—and germanium transistors had a limited temperature range. They did have, however, a fairly low operating voltage which made them suitable for use as power transistors, and germanium power transistors are still marketed today.

Silicon—with most of the advantages of germanium and none of the drawbacks—seemed to indicate to physicists that nature, for once, was on their side. The first silicon transistor was made by Texas Instruments in 1954.

Silicon is cheap, plentiful (it makes up 20 per cent of the earth's crust), easy to handle. It has an oxide which is useful in the fabrication of semiconductor devices and which can also be used as a dielectric.

These earliest transistors—which replaced large, expensive, current consuming and heat producing valves—were fabri-

cated in germanium, a material of the same chemical group as silicon.

Silicon has its limitations, especially in speed. Mr David Wilcox, a design engineer at Plessey, which has developed some of the most sophisticated high speed counters, points out that a counter fabricated in conventional silicon can run at 1.8 thousand million cycles a second. A counter fabricated in another material which is exciting considerable interest these days, gallium arsenide, could run twice as fast.

Gallium arsenide is probably the most important of the newer semiconductor materials. Research into its properties and potential is being undertaken at a series of commercial laboratories throughout the world including Bell Laboratories, Burroughs, Hewlett-Packard, IBM, ITT, Texas Instruments, Philips, Plessey, Thomson CSF, Fujitsu and Hitachi.

It is already used in a number of conventional products: light emitting diodes are composed of gallium arsenide

phosphates or indium arsenates. The high power lasers used for communications through glass fibre optic waveguides utilise complex compounds such as gallium indium arsenide phosphide to achieve exactly the right wavelength.

Gallium arsenide circuitry offers the possibility of high speed computation in a system which would not need elaborate cooling methods because of the lower power requirements expected of gallium arsenide chips.

Fujitsu, one of the three Japanese mainframe computer manufacturers, is well advanced with a super computer with logic based on GaAs. Strategic Incorporated notes: "If Fujitsu's efforts are not taken seriously, and if similar development programmes are not initiated in the U.S., Fujitsu is likely to become the world leader in the mainframe computer marketplace based on the use of GaAs technology."

So why are all the major computer manufacturers not jumping on the bandwagon?

According to Dr Tuck, who has been working on GaAs for almost 20 years, it is more expensive than silicon and more difficult to handle. David Grundy, Technology Director for Ferranti Semiconductor, puts it more pithily: "It is a state of a material to handle. Furthermore, it gives off toxic fumes during processing."

The cost difference is significant; several hundred dollars for a 3 in wafer (thin slice) compared with only \$5 for silicon.

According to Strategic (whose report is available from IPI, 134 Holland Park Avenue, London, W11, at a cost of £875) the worldwide market for GaAs products will rise from only \$2.7m in 1981 to \$1.9bn in 1990.

All the usual market sectors served today by silicon products are expected to make use of GaAs integrated circuitry.

There are, however, some performance trade offs as compared to fully custom devices. The logic array concept was pioneered in the UK, by Ferranti, but now most of the major chip manufacturers offer a range of logic arrays with different numbers of functions and built using different semiconductor technologies to suit various systems requirements.

Materials technology

ALAN CANE

simple switch in 1947. It was, some would argue, the major invention of the century. It certainly led, some 20-odd years later to what we now call the microprocessor revolution.

These earliest transistors—which replaced large, expensive, current consuming and heat producing valves—were fabri-

consumer applications.

Alternatively, they have been used in the rare instances when standard components cannot meet the performance required for a particular application.

Making considerable use of computer aided design systems, chipmakers can now tailor a circuit for a customer's needs from a library of predefined circuit functions. The resulting circuit may be slightly larger than one designed by hand from scratch, but the cost savings in the design process outweigh the proportionately small disadvantages of additional production costs.

Development time can also be halved to about six months. Another boost has been given to the custom chip market by the widespread acceptance of simplified design approaches pioneered in the U.S. by researchers Lynn Conway (of Xerox) and Carver Mead (of Cal Tech).

The Conway/Mead chip design methodology allows an electronic systems designer to design his own chips with a minimum of training, again using computer aids, and focusing on the system performance of the chip rather than the—for him—irrelevant details of optimal chip design.

More than 80 U.S. universities—and several chip manufacturers—are now offering electronics engineers courses based on the Conway/Mead method to teach the systems engineers how to design their own chips. These courses have sharply increased the number of people capable of designing an integrated circuit. Until

now, the number of chip designers in the U.S. was estimated to be only about 2,000.

A vast new market has opened up for "customer designed" chips. Industry estimates suggest that over 40 per cent of custom chips will be designed by systems manufacturers by 1984.

These chips are manufactured at "silicon foundries," more often than not the idle produc-

tion lines of the standard chip makers. Intel, one of the latest companies to enter the silicon foundry business, estimates that the market for such services is worth \$135m today, and that it will grow to \$680m by 1985.

For applications in which a full custom circuit cannot be justified—because of cost and volume requirements—another solution is the uncommitted logic array, or gate array. These circuits, which are often called semi-custom circuits, are a matrix of unconnected logic functions.

The logic array is "customised" by adding a layer or two of interconnections that define how the circuit performs.

Gate arrays offer a speedy—as short as 16 weeks—development cycle and are cheaper for lower volume requirements.

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ELECTRONIC COMPONENTS VI

Sheer complexity of design makes more demands on automation

Aim is flexibility and speed

UNTIL ABOUT 1960, the design, manufacture and test of electronic components and the functional circuit boards on which they were mounted to make electronic equipments was a relatively simple matter.

The designers, with their slide rules and basic measuring instruments, essentially used "cut and try" methods on their "breadboards" until the designs were perfected. The outcome was seldom any more than a few hundred components mounted between parallel rows of tagboards bolted to an aluminium chassis.

Then, electronic manufacture was entirely performed by serried ranks of operators armed with soldering irons. Only in the valve industry was much automation apparent, although the other component makers had their specialised assembly machinery.

Testing was really a question of old style "troubleshooting" with test engineers poking about in the chassis with meter probes. Component testing was a relatively straightforward measurement task.

All that was changed by the onset of digitisation and the invention of the integrated circuit in 1958. Designers applied themselves to packing more and more digital circuits into less and less area of silicon "chip" so that, in conventional testing terms, serious difficulty arose. Large numbers of previously accessible test points had disappeared into a little black box about the size of a cough lozenge.

Circuits became components—and the old style component makers had to think again. Completely new industries were born. Computer aided design (CAD) began to provide much needed assistance to chip and system board designers and automatic test equipment (ATE) gave similar computer assistance to testing which before long was to become impossible by conventional means.

Today, the CAD market is worth about £120m annually, world-wide and is likely to treble by 1985 according to International Technology Marketing, the U.S. research company. There are now about 1700 CAD installations; between 1978 and 1984 the growth rate will turn out to be some 35 per cent per annum says ITM.

Basically, CAD allows designers to "compose" their circuits on a screen, with rapid auto-placing of circuit segments, computer derived routing of connections (automatic checks for optimal placing of the items for best connectivity) and so on.

But the nature of the CAD offerings for integrated circuit (IC) design is beginning to change. For a long time they

is almost impossible manually. The need for extensive design rule databases held on disc stores, large files of cells (functional circuit elements) and physical shapes plus the need for great precision have all meant that computer assistance is unavoidable.

It is unavoidable, too, because of the shortening life cycle of the modern electronic product. To remain competitive, systems houses need their chips faster than ever, and this is only possible through design automation.

The more recent VLSI (very large scale integration) circuits are proving to be something of a problem due to sheer complexity, so that CAD systems concerned simply with the physical layout of silicon may not prove adequate.

Many CAD companies are moving towards systems in which, for example, the tasks are split between several workstations, some working on logic verification and others on timing problems.

Just as much effort is going into printed board design systems and there are now about twice as many installed as there are IC systems due to extensive use by equipment makers. Such systems are viable provided that about 50 new board designs are performed annually with about 100 ICs per board.

In the gate array the semiconductor chip surface is covered with circuit "cells" that can be connected together with application-specific tracks to suit the customer's objectives. Some cells are wasted. The custom chip, however, is fabricated precisely, from scratch, to meet the customer's needs; so production runs must be large.

Both need CAD simply because there can be tens of thousands of active elements on a chip—whole computers in fact—and the task of design

is almost impossible manually. The need for extensive design rule databases held on disc stores, large files of cells (functional circuit elements) and physical shapes plus the need for great precision have all meant that computer assistance is unavoidable.

Given enough throughput, board production is also worth automating. For example, the IC content of a board can be inserted automatically by machines that move the board about on an X-Y table while the ICs are selected from storage stacks and their feet pressed into the board.

Other machines can deal with separate resistors and capacitors from bantamised or pre-sequence components.

Then, the other side of the board is soldered up automatically on a flow soldering machine.

Finally, the product must be tested, be it component or board. For the IC maker the problem is that cost of testing each new high volume device grows with its complexity while at the same time the price per piece tends to drop. Thus, maximum flexibility and speed of testing is the objective, while test quality must be maintained.

Half a dozen companies share the IC/ATE market, now probably worth about £200m per annum according to Datquest, the survey firm. Challenges appear for the makers all the time and are helping to keep up sales in a market which is not quite what it was in the buoyant 1975-79 period. They include the 64k Ram, 16 and 32 bit microprocessors and bubble memories—so the SC industry has to stay on its toes.

The company is an active participant in the U.S. Department of Defence VHSIC (very high speed integrated circuits) programme and is leading the field in the implementation of new automated integrated circuit production processes.

TI is by far the largest producer of a wide range of TTL circuits which remain the workhorse of many electronic systems. In the microprocessor area, TI has been particularly successful in the high volume market for low-cost single chip microcomputers that go into all sorts of consumer products.

Apart from components, TI has large businesses in calculators, electronic toys and personal computers.

TEXAS INSTRUMENTS

Weathering the recession

Texas Instruments is the world's largest producer of semiconductor components. The company ranks second in the production of discrete components, with estimated 1981 sales of \$343m and first in integrated circuits with 1981 sales of the order of \$1,400m.

Recently TI announced lay-offs of 3 per cent of its workers world-wide, about 2,700 people, mostly in the semi-conductor and personal computer production divisions. TI is, however, believed to have weathered the recession better than most U.S. semiconductor producers.

The company has the only major, wholly-owned American IC production facility in Japan where it is producing the bulk of its 64k Ram devices. TI has been relatively successful in the 64k Ram market, taking about 15 per cent of the market.

There is now hardly any single combat arena that does not have its own complex electronics requirements, whether it be for the launching and guidance of underwater long-range ballistic missiles, through the control of anti-tank missiles and laser target range-finding instruments on land, to the acquisition, identification, tracking and attacking of hostile aircraft thousands of feet above the earth and thousands of miles out over the North Atlantic ocean.

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Louise Kehoe



The RAF's multi-role combat aircraft Tornado and some of its weaponry: big users of electronic devices

Military needs push back the frontiers

MODERN WARFARE—and the development of the necessary weapons to conduct it—has become increasingly orientated towards electronics over the past few decades, and the pace of that development is accelerating.

The range of military electronic equipment is vast, encompassing not only communications through radios, radars, data transmission systems and other devices, but also to unique items such as "head up display units" to make high-speed aircraft pilots' tasks easier, and

to counter such threats, the Tornado in its basic strike version is being fitted with automatic radar warning and jamming equipment, as well as counter-measures against attacking missiles which are themselves equipped with such devices as infra-red homing aids, to enable them to hit the target with great accuracy.

EW is playing an increasing role in the Fleet, and substantial improvements in this area are planned for ships, submarines and aircraft. These include Sea Gnat, a new shipborne system for decoying anti-ship missiles; new shipboard

Electronic defence

MICHAEL DONNE

jammers; and new and improved methods of alerting the defending forces against impending attack.

On the land, a programme of studies on every aspect of Electronic Warfare is being undertaken to help the development of future equipment, while existing communications systems for all three armed forces are being improved.

With so much of the defence electronics activity being covered by security, it is difficult to determine just how much of the work that is done for the military helps in the development of electronic components for commercial use, but it is bound to be a significant amount. With so much money being pumped into the industry militarily, it is inevitable that there will be a major spin-off for the civilian community from defence-inspired technological advances in electronics.

Work done on military radio systems, for example, such as Pilmigant, and in such areas as radar, integrated circuitry, and visual display units, is already having its effect in the civilian arena.

It is significant that the major electronics companies in the UK are all big recipients of military contracts. The last Defence White Paper revealed, for example, that General Electric and Plessey each received over £100m for defence equipment in 1979-80 (the last year for which figures are revealed), while EMI and Ferranti each were paid between £50m and £100m, Racal between £25m and £50m, and companies such as Cossor, Smith Industries, and Thorn Electrical between £10m and £25m.

Without such inputs of military cash, and without the challenges of breaking new ground at the frontiers of electronic technology that the military requirements generate, it would be much more difficult, if not impossible, for the electronics industry to advance at its current pace.

ITT

Change of strategy

INTERNATIONAL Telephone and Telegraph is a U.S.-based conglomerate whose 1981 sales were \$23.2bn, including revenues from finance and insurance. The company's electronics components group accounts for about 6 per cent of global sales, but some of the company's other activities, such as telecommunications equipment, also involve electronics.

ITT's semiconductor group, with facilities in France, the UK, the U.S. and West Germany, claims to be Europe's largest producer of electronic memories. ITT also makes silicon diodes for use in various consumer electronics applications.

In recent years, ITT has acquired two other electronics-related companies in the U.S., Qume, which makes high-speed printers for word processors, and Courier, which makes video display terminals, mainly for IBM.

ITT is working on a strategy

Ian Hargreaves

IRELAND TODAY



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IDA Ireland
INDUSTRIAL DEVELOPMENT AUTHORITY

Today, more and more of the top names in electronics have made Ireland their European base. Apple Computer, Amidahl, Atari, Dataproducts, Digital, Ericsson, Fujitsu, Measurex, Mostek, Varian and Verbatim are just some of the companies already located here.

The Irish government's industrial development agency has offices in London at 58 Davies St, London W1Y 1LB. Offices also in Dublin, Amsterdam, Paris, Cologne, Stuttgart, Milan, Copenhagen, Madrid, New York, Chicago, Los Angeles, Houston, Cleveland, San Francisco, Boston, Fort Lauderdale, Sydney, Tokyo.

to bring together its expertise in its various electronic areas and can be expected to enter new areas in the 1980s, although for the moment the company seems to be concentrating upon its core telecommunications business and upon various operational and software developments in electronics.

As a major international telex operator through its ITT Worldcom subsidiary, ITT is also trying to pursue a "communications package" approach to marketing its hardware and software services.

In Europe, the company is also a major consumer of electronics components made by others for use in its television, consumer electronics and appliance businesses. Much of this product is now made in Japan and sold in Europe under the ITT label.

Stewart Fleming

Financial Times Monday April 5 1982

BBC 1

TELEVISION

Chris Dunkley: Tonight's Choice

Indicates programme in black and white
6.45-7.05 am Open University (Ultra High Frequency only)
9.45-10.05 The Wombles: 9.50 Jackanory: 10.05 The Banana Splits: 10.35-11.00 Why Don't You...? 12.30 pm News After Noon: 1.00 Pebble Mill At One: 1.45 Pigeon Street: 2.00 Men v Women: International Golf Challenge: 2.50 Bugs Bunny: 3.15 Songs of Praise from Wells Cathedral: 3.53 Regional News for England (except London): 4.15 Play School: 4.20 Cheggers Plays Pop: 4.45 Jana of the Jungle: 5.05 John Craven's Newsround: 5.10 Blue Peter: 5.40 News: 6.00 Regional News: Magazines: 6.25 Nationwide: 6.35 Duffy's Duck's Easter Special (Cartoons): 7.20 Brett Maverick: starring James Garner as the West's most famous gambler: 8.10 Panorama: Searching for the New Zimbabwe: 9.00 News: 9.25 The Monday Film: "Junior Bonner" starring Steve McQueen: 11.05 Film: S2 with guest presenter Martin Aitken: 11.30 News Headlines: 11.40 The Computer Programme: Talking to a Machine.

BBC 2

All IBA Regions as London except at the following times:
ANGGLA: 9.30 am Larry the Lamb: 9.45 Rocker Robin Hood: 10.10 Furtuna: Film: "Please, Sir," starring John Alderton and Darryck Gaylor: 11.50 Waterloo: 12.30 pm Jewellery: 1.20 Monday Matinee: "The Taming of the Shrew" starring Elizabeth Taylor and Richard Burton: 6.00 About Anglia: 6.30 Movie Memories: 10.30 About Anglia Reports: 11.00 Thriller: 12.15 am The Davidson File.
BORDER: 9.35 am Sesame Street: 10.35 Documentary: 11.00 World Famous Documentary: 11.15 Show: 12.30 pm Superstar: 1.20 Sunday Magazine: 2.00 Film: "The Molly Maguires": 6.00 Lookaround Monday: 6.15 Can in the Kitchen: 6.30 Cyril Fletcher in Concert: 10.30 The Monte Carlo Show: 12.30 RL Action: 12.15 am Border News Summary.

CENTRAL

9.35 am 3-2-1: Comedy: 10.05 Falcon Island: 10.30 "I'm the Giant Killer" starring Kevin Matthews: 12.30 pm Survival: 1.20 Central News: 2.00 Monday: "The Monday Screen" starring Norman Wisdom: 4.00 HTV Carton: 6.00 Granite Reports: 9.00 Quincy: 12.15 am The Odd Couple.

HTV

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RADIO

RADIO 1
5.00 am As It Happens: 2.70 Mike Read: 9.00 Simon Barstow: 11.30 Dave Lee: 12.30 pm Peter Bonelli: 1.20 Steve Wright: 2.00 Peter Powell: 7.00 Steve: 8.00 Andy Pashley: 8.00 David Jensen: 10.00-12.00 John Peel in Liverpool (5).

RADIO 2

5.00 am Colm Barry: 5.30 Ray Moore (S): 10.00 Jimmy Young (S): 11.00-12.00 pm Peter Bonelli: 1.20 Steve: 8.00 Andy Pashley: 8.00 David Jensen: 10.00-12.00 John Peel in Liverpool (5).

RADIO 3

8.05 am Weather: 7.00 News: 7.05 Morning Compact (S): 8.00 News: 8.30 Compact (S): 9.00 News: 9.30 Squares: guitar recital: 10.00 News: 10.30 BBC Light Music Concert (S): 11.00 News: 12.30 pm Sports (S): 1.15 Weather: 2.00 Radio 3 Matinee: "The Monday Screen" starring Judy Garland and Fred Astaire: 3.30 Kum Kum: 6.00 Scotland Today: 4.45 Crime Doctor: 10.30 Encore at the Edinburgh Folk Festival: 11.15 Late Call: 12.15 Jingles.

RADIO 4

6.00 am Weather: 6.10 Farming Week: 6.25 Shipping Forecast: 6.30 Weather: 6.45-7.00 Sports (S): 7.00 News: 7.15 BBC Light Music Concert (S): 8.00 News: 8.30-9.00 Matinee: "The Monday Screen" starring Judy Garland and Fred Astaire: 9.30 Kum Kum: 10.00 News: 10.30 Weather: 11.00-12.00 pm Monday Matinee: "The Passion and Death of Jesus Christ" according to St Luke, part 1 (S): 3.25 A World of Strangers: 9.10 Pendrake St Luke Passion: 10.15 Weather: 11.00 News: 11.30 Weather: 12.30 pm Sports (S): 1.15 Weather: 2.00 News: 2.30 BBC Light Music Concert (S): 3.00 News: 3.30-4.00 Matinee: "The Monday Screen" starring Judy Garland and Fred Astaire: 4.30 Kum Kum: 5.00 Scotland Today: 5.15 Weather: 5.30 News: 5.45 That's Hollywood: 6.15-7.00 Weather: 7.15-8.00 News: 8.15-9.00 Weather: 9.15-10.00 News: 10.15-11.00 Weather: 11.15-12.00 pm Sports (S): 1.15 Weather: 2.00 News: 2.30 BBC Light Music Concert (S): 3.00 News: 3.30-4.00 Matinee: "The Monday Screen" starring Judy Garland and Fred Astaire: 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MANAGEMENT

EDITED BY CHRISTOPHER LORENZ

How the law is oiling the wheels for women at work

BY LISA WOOD



Female apprentices at Vickers: they have had a salutary effect on the behaviour of their male colleagues

CRAFT apprenticeships have long been a male preserve in industry. Clear evidence of entrenched attitudes, according to Dorian Freeman, personnel manager at Vickers Shipbuilding and Engineering, can be found in the fact that "fathers workers were probably the most vociferous opponents of their daughters taking up apprenticeships at Vickers."

Changes are taking place, however. Today, a total of 50 of the 1,600 apprentices at Vickers' shipbuilding works at Barrow-in-Furness, in Cumbria, are female. And, significantly, they have had a salutary effect on male apprentices.

Cases of indiscipline have fallen, says Freeman, and the standard of work and achievement has risen "appreciably" in the company's training centre and at the local college of further education.

The key factor behind this transformation has been the UK's equal opportunity legislation. Before the Sex Discrimination Act was passed in 1975 Vickers had no female apprentices in its craft trades except for a few instrument technicians. "Neither management nor the unions would consider the possibility, for example, of women fitters and turners before the Act," says Freeman.

But with its advent the company had seriously to consider applications from girls. "The company was both pleased and sceptical at the increased interest for apprenticeships shown by the local girls," says Freeman. "Pleased because it meant that we could meet our required annual intake figures for the first time in a decade. But sceptical because we were unsure of the boys' reaction to one or more girls in

the training sections, and, more important, how the production departments would cope with them on completion of their first year 'off-the-job' training."

Such fears, says Vickers, have been unfounded. Discrimination only became an issue when it was found that some supervisors were giving the girls special privileges, such as allowing them to take their breaks in an office rather than outdoors with the rest of the department's workforce.

While the number of female apprentices at Vickers is still only a trickle, the company appears well pleased with its policies. For strange as it may appear Vickers, tucked away on the Furness peninsula with a predominantly rural hinterland, has always required more apprentices than there were local boys available. Better educated boys, for example, were positively encouraged not to go into the shipyard.

Conversely, more girls in the area sought employment than there were jobs available so the 1975 Act gave Vickers access to a new pool of talent without having to resort to any special measures.

Vickers' experiences emerged at a recent conference on equal opportunities for women jointly sponsored by the Confederation of British Industry and the Equal Opportunities Commission.

Further evidence of the progress being made was illustrated by the action being taken by the Engineering Industry Training Board on the one hand to encourage women into the skilled areas of engineering and on the other to encourage employers to take them on.

Six years ago the training board initiated an experiment in the Midlands and south-east London to try to attract more

female technicians. Since then the scheme has been extended to give additional grants to companies if they recruited girls. Some 150 girls were taken on under this scheme last year, bringing the total number of women trainees in the skilled trades to about 200 out of a total of 14,500.

There has been little overt reaction to the few positive measures designed to attract skilled women. According to Penelope Jones, head of research at the Engineering Industry Training Board, "there

has been no serious backlash as everybody in the industry knows that the female intake is very small in relation to the total."

For in the engineering industry the vast majority of women—some 93 per cent—are still employed in the relatively low-skilled categories. Only 2.3 per cent of scientists and technologists are women, only 2 per cent are technicians and only one-third of 1 per cent are craft employees.

Change in the main appears to be evolutionary—schools perhaps now have a more enlightened attitude towards girls studying the sciences. Of trainees in 1980 some 26.9 per cent were scientists and technologists compared with 14.8 per cent of the 9,664 men. In 1975, when there was a much smaller total of women, roughly 11 per cent of both sexes were training for these grades. "We are witnessing a swing which is marginally in favour of women in recruitment although

the numbers are still very small," says Mr Jones.

A shortage of suitably skilled labour, particularly in the south east, was the primary reason motivating Ford when, in the early 1970s, it tried to establish the principle of women doing shift work.

The conflict between management and the unions has continued since then with unions at Ford currently objecting to a Health and Safety Executive dispensation to the company on the issue. "An acute recruitment problem at a certain time in our history was the reason we wanted to introduce women on night shift work," said a Ford spokesman. "There is also the case for equality of opportunity; some women want to do shift work."

The denial of the opportunity to do shift work is one of the reasons why the small number of women shop floor employees earn less than the average at Ford because night shift work pushes wages up by 33 per cent or one sixth over the two shift period.

Unions like those representing Ford workers give protective reasons for women not doing night work. Unions have been trotting these out over the last decade—at their most extreme they allege that night shift work would break up the family unit, expose women to possible hazards from male colleagues and muggers and rapists on their way to and from work.

The contradiction is that such reasoning is never applied to work like nursing which is done by women working throughout the 24 hours—something which has always been accepted by nurses' unions.

Problems for women are equally evident elsewhere.

Potential "high flyers" in banking are also seeing a very small movement towards positive action. The problem does not arise on entering the profession but later on when trying to combine career and family in a service whose management structure is strongly age-related.

Jane Adams, career planning adviser of the National Westminster Bank outlined an experimental scheme being run for the bank's "high flyers" the women managers of the future who also want a family.

Of the bank's 60,000 staff some 50 per cent are women but they are concentrated at the bottom end of the management structure. Banking enjoys what is called a "progressive age-related management structure" and if a person opts out of employment for a few years there is little opportunity of re-entry except at the lower grades.

The new scheme, emphasises Adams, is at a very experimental and tentative stage; it involves a small number of women who leave the bank's employment for up to five years and then, if suitable vacancies arise, can re-apply for a job at their previous grade.

The intention is that the bank keeps in touch with the women over the out-of-service period, through newsletters as well as stipulating that relief work, of a minimum of two weeks, be completed every year.

"By and large the response from employees has been favourable," says Adams. "In the context of 60,000 staff the scheme is very small. It is for exceptionally able and ambitious women. Most of the staff are sympathetic to their problems."

The majority of women, however, like most men, are not what personnel officers deem high achievers. A recent survey commissioned by the EEC Council of Ministers showed rather surprisingly that British working women felt the least disadvantaged of all EEC women in paid employment. One reason for this may be that more UK women who are in paid employment work in industries that are female dominated, whereas in West Germany, where dissatisfaction was greatest, the opposite is true.

Professor Cary L. Cooper, professor of organisational psychology at the University of Manchester Institute of Science and Technology, who examined the results of the survey, explains that "the segregation of the sexes by industries in the UK may produce less problems and consequently less dissatisfaction."

Professor Cooper reports that a further study by the EEC found that women felt the main reasons for them having less opportunities were family commitments, men's attitudes, occupational attitudes, uprating and the lack of legislation.

They felt therefore that the most important improvements should be the provision of a flexible working week, easier and less costly access to child-minding services, easier access to jobs by returning mothers, better distribution of household tasks and a wage for work done in the home.

"Companies and the Government," said Professor Cooper, "will have to come to terms with the growing demands of women to work and fashion corporate and political policies to meet changing social circumstances."

be ignored or played down;

● Journalists seize every opportunity to "knock" British products;

● It is taken for granted that British companies are less efficient or less progressive than foreign counterparts.

* *The Business-Media Relationship*, available from Management Centre Europe, Avenue des Arts 4, B-1040 Brussels, Belgium, price \$10, or American Management Association, Amacom, 135, West 50th Street, NY 10020, NY, U.S.

Arnold Kranzdorff

Publish—and be damned

According to the research, U.S. financial journalists also agree with the criticism that inaccurate reporting is due to "sloppiness" rather than bias. While three-quarters of chief executive officers believed that fewer than half of financial reporters understand the workings of business, a majority of the journalists themselves admitted that they should have

better knowledge of aspects such as balance sheets, the general practice of management, and the stock market.

In their apparent defence, financial journalists felt that businessmen were not entirely honest with their own public relations departments and roughly a third said that businessmen often lied to them.

In the UK business attitudes towards the media are equally

critical, although accusations of inaccuracy are not as widespread as in the U.S.; a third of Britain's top businessmen consider business reporting to be generally accurate with another third describing coverage as "acceptably inaccurate."

These are the conclusions from a survey of executives in 800 companies made by the UK

monthly magazine *Chief Executive*.

The top businessmen complain that much of the media coverage on business issues displays a total misunderstanding of how industry works. They also say that too much attention is paid to industrial giants and not enough to "ordinary" companies.

Around two-thirds think that an unequal amount of space/time is given to trade union news.

Their other complaints are:

● There is too much concentration on bad news;

● Industry successes seem to

The good news is
FERRANTI
Selling technology

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Monday April 5 1982

Jingoism is not the way

THE ARGENTINE seizure of the Falkland Islands is an outrage. Military invasion is an illegal and immoral means to make good territorial claims, however strong nationalist fervour may be at home. Britain must therefore resort to every viable means to counter the *coup de main* which placed 1,800 unwilling Falkland Islanders under the Argentine flag on Friday.

The seeming confusion with which British ministers reacted on Friday, as news of the invasion began to harden should not blind one to the fact that a diplomatic success, maybe small, but also significant, has been achieved. The importance of the Security Council vote calling for an immediate Argentine withdrawal should not be underestimated.

Only Panama, with obvious reasons for Latin American solidarity, voted against. The Soviet Union, and its Polish follower, abstained. So did China and, with its own interests in Gibraltar in mind, Spain. What is significant about the vote is that all Third World members of the council supported the British motion. Those are the countries with strong and understandable anti-colonialist convictions of their own. They did not fall for the Argentine case that British possession of the islands was no more than another instance of colonialism.

Britain therefore, is in a position to marshal a powerful coalition of opinion, from Kampala and Kinshasa to Washington and Paris, against the Argentine attack. The Security Council resolution called for a resumption of diplomatic methods to resolve the problem. Provided genuine pressure can be put behind that demand, it offers the most attractive way out of the impasse. Full European support must be secured through the process of political co-operation.

Position of weakness

Flushed as they are with their military success, the Argentine generals will not find that prescription palatable. It is up to world opinion and to those who expressed it in the Security Council to make them see reason. Yet it would be foolish to forget that the United Nations has called before for a negotiated solution with scant success.

The lesson of Friday's invasion is that in the end you cannot negotiate successfully from a position of weakness. Only if world opinion does not merely leave it at the Security Council resolution is there a hope of some righting of that imbalance.

Similarly hard facts need to be considered in discussing the military possibilities. A British naval force operating in the South Atlantic would be stretching its lines of supply to their limit and maybe beyond it. Even if a counterblow were to be struck and were to be successful, the problem of the Falkland Islands would not disappear. Argentine determination to gain possession would be reinforced. The anachronism of Britain seeking to retain control of an area thousands of miles away from its possible sphere of influence and remote from its present national interests would not be removed.

Several solutions

Amid the hubbub it is therefore essential to keep eyes firmly fixed on a viable long term solution. Political morality demands that such a solution should not pass over the wishes of the Falkland Islanders who wish to preserve their traditions.

Several such solutions have been proposed. A condominium was one of them. Buenos Aires turned that down on the historical argument that sovereignty over the islands resides in Buenos Aires as heir to the Spanish empire of long ago. Another idea that failed to find favour was that Argentina should become sovereign in name, but that the Falklands should then be leased back to Britain for a very long period.

One could think of other ways out. A statute of autonomy underwritten by the UN is intellectually conceivable. Provided it were to be properly drafted and secured, it might go far towards meeting the Falklanders' wish to lead their own lives.

Each of the long-term solutions would require both disputants to swallow some of their pride. But they would have the merit of recognising that the Falklanders have rights of self-determination. They would also take account of the fact that geography makes the Falklands dependent to some degree on economic and communications links with Argentina and, in the long run, makes British protection for them a herculean task.

Political differences

The fact of the matter is that the Argentine Government believes that it has created a *faid accompli*. Buenos Aires will not budge unless the world at large and Britain especially are determined not to acquiesce in that. Argentine vulnerability to economic and other pressures should not be overlooked. A case can therefore be made out, at the very least, for keeping the Argentine Government in doubt about British intentions. If the Argentines know that nothing can happen to them, then they will hardly be likely to entertain the idea of compromise. There should, however, be no mistake about this; it is the Falklanders themselves who would bear the brunt of any attempt to retake the islands.

What is deplorable is that the issue is rapidly becoming mixed up with political differences within Britain itself which have nothing to do with the matter in hand. Not only the pride of the Argentine Government is involved. So is the standing, perhaps even the survival, of the Tory Government in Britain. That does not make for rational action on either side.

In truth, the British Government does have questions to answer. Why was it so evidently taken by surprise? Why had it misread the signals from Buenos Aires so badly that it neither took precautions, nor made a supreme effort to advance by its own chosen route of diplomacy?

The results of negligence cannot be undone by something near panic. Ministerial statements in the first, humiliating hours of the crisis have suggested a determination to drive out the invaders and reoccupy the islands; but to what end? There is no point in a large expenditure of force to reassert a right which, as the Prime Minister herself pointed out, we have not the means to sustain in the long term. It is precisely because no substantial British interest was involved that the crisis was allowed to arise in such a careless way. The danger is that a process of escalation has begun which will be very difficult to control.

Argentina: behind the euphoria

By Jimmy Burns in Buenos Aires

IT IS hard to convey the extent and depth of the change that has occurred in Argentina in just three days. Its most poignant symbol lies in the scenes of euphoria that pervaded the streets of Buenos Aires following the Argentine military invasion of the Falkland Islands early on Friday.

In the eyes of many Argentines, President Leopoldo Galtieri had become the hero of a historic moment in which the country's armed forces had at last found their *raison d'être*. In the eyes of many Argentines, President Leopoldo Galtieri had become the hero of a historic moment in which the country's armed forces had at last found their *raison d'être*.

Only a week before thousands of Argentines had converged on the presidential palace in the first major demonstration against a military government since the 1976 coup. Yet on Friday many of the same people linked arms with the same security forces who had previously beaten them to the ground, joyously waving Argentine flags and bringing President Galtieri on to the balcony of the presidential palace to rapturous applause.

The background is necessary to understand President Galtieri's vow that the military will remain in the Falklands and will "go to battle" if and when a British task force arrives. By invading the Falklands the Argentine military solved in a matter of hours what had eluded them in the six years they had been in government: the unification of the nation behind them. It took President Galtieri a whole day to react officially to Mrs Thatcher's counter-invasion threat. There was no parliamentary debate as in England, but there was much deliberation and still persists here. It judged by deeds alone."

Galtieri rose through the military hierarchy thanks to his reputation as a tough no-nonsense soldier in the fight against the Montonero guerrillas between 1976 and 1978. His few months of presidential power

The President's rhetoric should not be underestimated by Britain. When he took power only last December he promised that the "time for words had passed" and that the government "would henceforth be judged by deeds alone."

The Argentines had anticipated a diplomatic victory at the United Nations and the result of the Security Council's vote on Saturday was a major setback. The Argentine foreign ministry had hoped that hours of intense lobbying had ensured

the support not only of most of the third world but also of some European countries such as Spain, and major powers like the Soviet Union and China.

In the event the Soviet Union, China and Spain abstained, and the third world was far from heralding Argentina's sovereignty claims as the justified "liberator from colonial rule" as many Argentines had hoped. Panama's thesis that any military counter-attacks against Argentina would inevitably line up Latin American armies behind the Buenos Aires government is utopian, rather than real. Brazil, one of Latin America's major military powers, had supported Argentina's sovereignty claims but refused to condone the invasion. Indeed Brazil may even be prepared to allow its ports as refuelling stops for the Royal Navy if and when it approaches Latin American waters. Similar

feelings are shared by Chile.

The predominant consideration of Argentina's Latin American neighbours is the possible future direction of Argentine foreign policy. They fear that any vindication of Argentina's military exploit in the Falklands might tempt Buenos Aires to do the same with its neighbours in a similar vein, particularly in territorial disputes like that which exists with Chile over the Beagle Channel.

The reaction of the U.S. has also surprised the Argentine government. Since taking power Galtieri has gone out of his way to forge a strong relationship with Washington, particularly on such crucial issues as Central America. Buenos Aires had never really expected the Americans openly to support the invasion of the Falklands, but they had certainly looked forward to a position of quiet acquiescence.

Developments in the last 48 hours are therefore threatening Argentina with the prospect of international isolation. And besides this there is the possibility of further economic sanctions from Britain and possibly other countries. But on balance most Argentines remain submerged in the patriotic dimension of the military recovery of the Falklands. Indeed the financial sanction announced by Mrs Thatcher over the weekend have been brushed aside as pinpricks. The threat of a British military counter-attack is still generally dismissed as bluff.

However, independent analysts believe that major sanctions by the EEC and the U.S. would seriously damage the Argentine economy at a time when it is already extremely vulnerable.

Argentina is still heavily dependent on Western credit lines for balance of payments support and foreign banks like

the Bank of London and South America and the First National Bank of Boston have a strong profile domestically.

Western countries such as West Germany are not only important suppliers but also participants in key sectors of local industry like cars and energy. Europe also remains an important outlet for meat one of Argentina's main agricultural exports.

Argentine military officers have boasted that their armed forces could put up a strong defence of the Falklands and severely damage any British invasion fleet, but this smacks of psychology rather than logistics. Independent strategists believe that any full-scale military confrontation between Britain and Argentina would almost certainly lead to the destruction of the Argentine navy and the loss of the bulk of the air force. Casualties would be substantial on both sides, but particularly heavy on the Argentine side.

President Galtieri's dilemma is that any climb-down over the Falklands at this stage could well destroy the prestige of the armed forces have gained and might eventually precipitate the collapse of the military regime. Argentina could, of course, turn in on itself with a heavily protected economy and with the establishment of wider trade links with countries like the Soviet Union which already takes the bulk of Argentine grain.

Such a strategy however would be in outright contradiction of everything the current regime has stood for—a foreign policy firmly orientated to the U.S. and an economic recovery programme based on foreign investment. And that is to ignore altogether the political repercussions of a humiliating military defeat at the hands of the Royal Navy.

committed Britain to taking whatever military action is necessary to reclaim the islands. But the two weeks it will take to get a task force to the South Atlantic is a long time in war as well as politics.

Tory MPs were saying after Saturday's backbench meeting that if the Government did succeed in reclaiming the islands it could yet emerge with its prestige not only intact but enhanced. But some ministers, with painful memories of Suez, were saying privately that the Government could be digging a hole from which there may be no graceful way out.

Their hope was that in the time it will take to get the task force to the South Atlantic, the present patriotic fervour might be tempered by a pragmatism which could yet hold the party back from a full-scale war.

Elinor Goodman

Britain: 'now it is the time for action'

THE SUPREME irony of the Argentine invasion of the Falkland Islands was that it should take place on the same day as the young Winston Churchill was appointed to a new job at Conservative Central Office to sell the party's defence policies to the electorate.

The Conservative Party has always prided itself—above almost all else—on its ability to defend Britain. Now, in an attempt to salvage that reputation, it is in danger of embarking on a course of action which some of its own MPs privately believe is unsustainable.

In the long term, some Tory MPs were saying yesterday that Britain may not be able to defend a possession 8,000 miles away in the South Atlantic, even if it can repossess it. But in the present mood of nationalistic fervour that is not a sentiment many MPs are prepared to express.

Such thoughts, said one MP, "are unthinkable at the moment."

Now is not the time for thinking or defeatist talk. It is the time for action."

Indeed, most Tory backbenchers were insisting at the weekend that the Government's credibility depended on getting the Islands back. They claimed to be convinced that the Government shares this view, and that it is prepared to go to any lengths to reclaim them.

By the end of the weekend, Ministers had raised expectations on the Tory benches to a point where many Tory MPs seemed to regard some form of military engagement as almost inevitable. In the circumstances, the Government's options could be very limited.

The price of failure to get the Islands back—or of anything that is seen as a diplomatic sell-out—would be the head of at least one Cabinet Minister, and quite possibly two: the Defence Secretary and the Foreign Secretary, Mr John Nott, the Defence Secretary, more or less

acknowledged as much yesterday on ITV's *Weekend World* programme, as he responded to his own backbenchers with increasingly hawkish noises.

Saturday's debate showed the full extent of the rage on the Government benches: not since the Suez crisis has a Government Minister caused such despair among his backbenchers as Mr Nott winding up. As soon as he sat down, the Government whips began rushing round in an attempt to persuade certain influential moderates that the worst thing for the party now would be resignations.

As a result, the message to come out of the packed private meeting of Tory MPs after the debate was that the party was not looking for resignations now. Initially, however, both Lord Carrington and Mr Nott got a very hostile reception indeed from the meeting. Successive speakers apparently made it clear that the Government should stop at nothing to get the Islands back.

The Government, they said, should be prepared to declare war as soon as the task force left. The time for long term diplomatic solutions, it was said was once Britain was back in control. It was apparently only after the two ministers had appeared to take this message on board that they got the conditional support of the meeting.

Even so, certain very vocal groups of MPs are still gunning for both Mr Nott and Lord Carrington. Mr Nott has had problems with certain sections of the Conservative defence establishment since taking over as Defence Secretary last year.

A highly intelligent man, with what one of his colleagues describes as a "low flash point", he does not suffer fools, or opposition gladly, and he has had little sympathy for those Tory MPs who insist that he is set on cutting Britain's conventional defence spending

In the same way, while most Conservative moderates believe that Lord Carrington has been an excellent Foreign Secretary, some rightwingers believe he has consistently sold Britain short. For this group, the Rhodesian settlement was a disaster. There has long been a suspicion among those MPs interested in the Falkland Islands that the Foreign Office was bent on getting rid of them.

All these suspicions contributed to the sense of outrage in Saturday's debate. But the anger went far beyond that minority of MPs who normally concern themselves with such matters. As Mr Michael Foot pointed out in his most effective performance since taking over as Labour leader, there was a sense that the Government had betrayed those who depended upon it.

And that is the kind of allegation which really hurts the Tory Party. To answer it, the Government now seems to have

Men & Matters

England expects . . .

Did Margaret Thatcher have a premonition? I ask. Though the Prime Minister apparently got no advance warning from the Foreign Office of the Falklands invasion, some weeks ago she suddenly despatched an urgent order to the National Maritime Museum in Greenwich.

"Send me Admiral Lord Nelson," she commanded.

As the Royal Navy sails belatedly from Portsmouth today, the Prime Minister must be musing about what prompted her to seek a portrait of Britain's most famous sailor to hang in No 10 Downing Street.

Up to then her gallery had been crowded with scientists and engineers, reflecting her preoccupation with the industrial and economic scene.

The museum, which "has more Nelsons than we know what to do with," sent Mrs T

a half-length study by Lemuel Francis Abbott, painted in 1800 and one of more than 10 portraits of the hero by this artist who died two years before Trafalgar.

Teddy Archibald, Greenwich's Curator of Oil Paintings, describes it as "an attractive thing" showing Nelson "with just a bath and no hat"—Bath, Order, that is.

It was delivered to Downing Street two weeks ago and has already been hung there. Whether the Prime Minister will be able to live comfortably beneath the Admiral's gaze now will presumably depend on the outcome of events in the South Atlantic.

The City and District Permanent, set up as a mutual benefit society by employees of Birmingham Corporation in 1882, now has about 100 investors, assets of £48,000 and £12,000 to lend.

President Derrig Ferguson tells me that, in fact, the society lent nothing in 1980 and only about £800 last year. "The rise in house prices over the past few years has taken them quite out of our reach now," he says. "We lend largely for garages and bathroom extensions."

Though there are no restrictions on who can invest in, or borrow from, the society, most of the people involved are employees of British Gas. Ferguson, a management development officer with the West Midlands Gas Board, and the other six directors draw no pay from the society. Almost half of the annual management expenses go in auditors' fees.

Ferguson was also in command of RAF Hong Kong—where he spent some time chasing pirates up the China coast—and has been bitterly opposed to the Foreign Office's idea floated in quiet times of an "Antarctic Hong Kong solution" for the Falklands. Under this plan, sovereignty would have been ceded to Argentina and the sheep-sown islands leased back.

In recent weeks, Frow has attacked the FO for its neglect of the islands. He now wants a graduated military response. His office is busily gathering

information to help the landing of a British task force. "We have been getting people together who know the terrain, the seaweed and pools," his assistant Suey Cameron told me yesterday.

Albritton will be undertaking the union talks in person and he did not get where he is today—with a fortune estimated at around £200m—by being anyone's pushover.

Last year, for instance, he rode roughshod into Washington and spent \$80m on buying 40 per cent of the shares in the Riggs National Bank, a pillar of the capital's financial establishment. The first section of the bank, which has assets of \$3.7bn, was one of polite horror. But Albritton is now chairman of the holding company board and chief executive.

Riggs apart, Albritton's interests are mainly private businesses concentrated in banking, real estate, insurance and communications. He owned the Washington Star for four years, running it in very tight style before selling it to Time Inc. at a profit in 1978. Three years later, Time felt obliged to close the paper.

Albritton now owns eight newspapers in the North Eastern states, along with a clutch of radio and TV stations. But the loss-making Daily News, the largest big-city newspaper in the U.S., is on quite a different scale.

If he gets the cost savings he needs, Albritton will find himself in head-on conflict with Rupert Murdoch's New York Post. The thought of a nose to collar button confrontation between the 5ft 3in Texan and the Australian magnate is one to make mere mortals quail.

Just how much longer the society can survive is uncertain. But Ferguson says the society's resources, at least, should earn it a place in the Guinness Book of Records.

"We'll Keep On Rollin'" shouted the banner headline in Friday's New York Daily News. But it could be quite a rough ride under its prospective new proprietor Joe L. Albritton.

The Texas millionaire has 30 days in which to sweep up a

Some of the worst wounds...

are the ones that don't show

It used to be called shell-shock. Now we know more. We know what there are limitations to the human mind.

Soldiers, Sailors and Airmen risk mental breakdown from over-exposure to death and violence whilst in the service of our Country. Service... in keeping the peace no less than in making war.

We devote our efforts solely to the welfare of these men and women from all the Services. Men and women who have tried to give more than they could.

THE U.S. PRESIDENCY

a Why Reagan's support is sliding

By Reginald Dale U.S. Editor in Washington

"IN SHORT, MR PRESIDENT, you have betrayed those Americans — and among them some members of our union — who voted for you on the basis of the promises you made." Extract from open letter from Mr Lloyd McBride, president of the United Steelworkers of America.

President Ronald Reagan is "likeable" according to 35 per cent of Americans. Time Magazine opinion poll.

"Reagan strikes" very drunk today on Denver, Colorado, bar stool.

"The days of sensational, quick victories are mostly behind us. Now we move from the glamour of initial commitment to the grit of the long haul." President Ronald Reagan.

Fifteen months into his Presidency, President Reagan is losing his image of amiable likeability. What last year looked like praiseworthy determination to solve the country's problems now begins to appear more like simple stubbornness. His opponents ridicule him almost every time he opens his mouth, and last week's much-heralded Press conference did little to repair the damage.

However there is still no real common conception of Ronald Reagan — among Americans, whatever cynical Washingtonians may think about him. An enormous range of reasons is offered as to why people are for or against him, or, more often, partly for and partly against him.

Mr McBride listed five specific areas of economic policy in which he said Mr Reagan had broken campaign promises. A Florida estate agent admired him for sticking to his principles — notwithstanding the disastrous collapse of the housing market. A young army captain supports his defence policies, but is increasingly desperate over the high interest rates he has to pay on his second mortgage.

A girl working in a Mid-Western flower shop could not care a hoot about his economic policies, but condemning him for failing to support the equal rights amendment for women. A black taxi-driver is strongly opposed to, even frightened by, Mr Reagan's cuts in social programmes, but thinks that the President is reasonably all right, as white politicians go — probably better than his predecessor Jimmy Carter.

These are fairly representa-

tive comments. Almost everybody has at least one reason for disliking Mr Reagan's policies and disillusion is beginning to show up strongly in the opinion polls. Even Mr Reagan's conservative supporters feel betrayed — they think his Administration has become infiltrated by liberal "wets" under the leadership of Vice-President George Bush.

The most recent New York Times/CBS Opinion Poll taken in mid-March showed that the number of those approving Mr Reagan's handling of the presidency had fallen to 43 per cent, less than the 46 per cent who approved of Mr Carter's performance at a similar stage of his term of office. The latest Gallup poll gave Mr Reagan a 45 per cent disapproval rating, against only an equivalent 36 per cent for Mr Carter four years ago. More strikingly, he is approved by only 7 per cent of blacks.

The 43 per cent approval rating compared with 49 per cent in January and 67 per cent a year ago — a figure that was almost certainly inflated by sympathy following the March 30 assassination attempt, the anniversary which Mr Reagan "celebrated" if that is the right word, last week.

US pollsters, however, caution that the figure must be seen against a trend in recent years under which each President loses approval just a little faster than his predecessor. Mr Reagan may be sliding more steeply than Mr Carter, who lost standing slightly faster than President Nixon, who, in turn, lost public esteem more quickly than did President Johnson.

If true, this is not much of a comfort to Mr Reagan, or to Republicans generally, as November's mid-term elections loom closer. And there have been an increasing number of signs in recent weeks that Mr Reagan and his closest advisers are beginning to get a little worried.

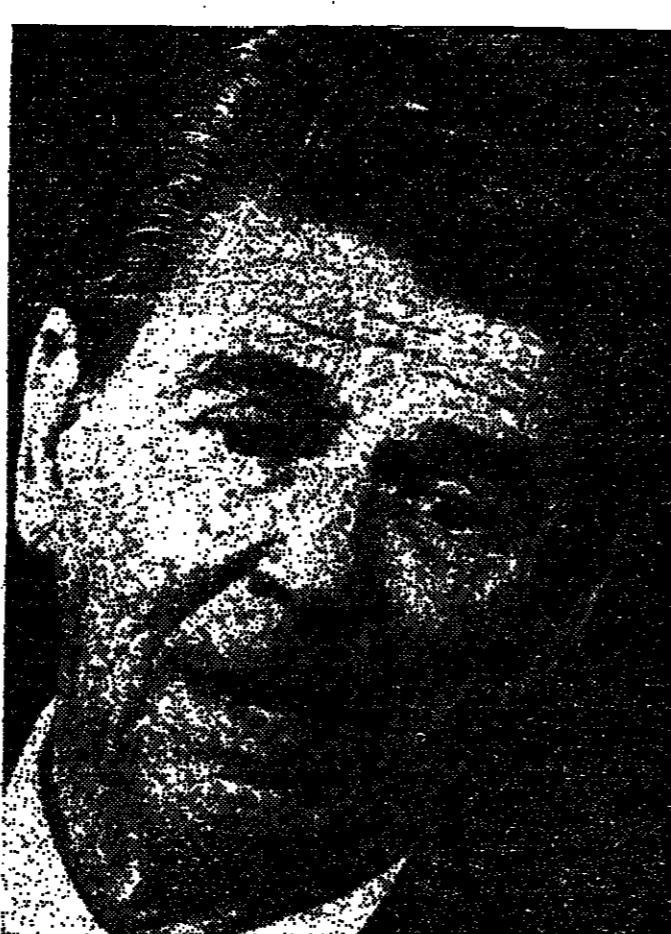
Things have not gone according to plan. On the economic front, neither Mr Reagan, nor the big business interests that supported him, so unquestioningly last year, expected recession to prove so obstinate. The long-awaited signs of economic recovery are still disappearing into the mists of spring like a wail-in-the-wind. Unemployment at 9 per cent is causing hardship and resentment at the Administration's policies.

A recent poll of members of the Wall Street investment community conducted by the

Administration expect interest rates to remain so high for so long. Even the faster-than-expect drop in inflation, the one bright spot in a sombre economic picture, has had the ironic effect of compounding the Administration's difficulties with the Budget deficit. Profits and incomes are not yielding the tax revenues on which the original budget calculations were based.

If deficit estimates don't matter much to Mid-Western flower sellers, they certainly do to Wall Street and the business community. Two weeks ago, the prestigious Business Roundtable, representing the captains of US industry, told Congress of its deep concern that the projected deficits, unless dealt with promptly, would encourage continued high interest rates and slow down economic recovery and growth.

A recent poll of members of the Wall Street investment community conducted by the



President Reagan 'facing a high disapproval rating'

to the collapse of other Latin American Governments and to endanger U.S. national security.

An astonishing 42 per cent said they do not believe Mr Reagan's current intention of not sending U.S. combat troops to El Salvador, and more than 80 per cent said they would be against such a move. Asked if they would support young men who resisted a draft to fight in the country, 51 per cent said they would.

The Administration has also been nonplussed by the strength of the campaign for a freeze on nuclear weapons — even in Right-wing Republicans' strongholds — that has now surfaced noisily in Congress.

Mr Reagan backed one watered-down version of the freeze proposal at his news conference last Wednesday, but his response has been criticised as too little and too late.

No one has yet produced a convincing reason for the phenomenon, although it is obvious that loose administration talk about nuclear war-fighting can hardly have helped. The Washington Post/ABC News Poll also found that 45 per cent of Americans believed the chances of nuclear war had grown since Mr Reagan assumed the Presidency. Forty-six per cent felt he had not done enough to limit the nuclear arms race.

Partly in response to this widespread sentiment and shared fears in Western Europe Mr Reagan took to the television screen last Wednesday for the first time at the peak viewing hour of 8.00 pm. It was a gamble and paid from the start whether it paid off.

He came over as unusually unsure of himself and typically his statistics were immediately challenged by his Democratic opponents. The old magic — even that of a familiar homely grin — was missing.

The reason for the change in format was partly a growing feeling in the White House that the Press, and particularly the big three television networks, do not give Mr Reagan a fair deal. His eight previous Press conferences, all in the afternoon were in media jargon, "filtered" through the main evening news programmes. The White House staff, and Mr Reagan himself, argue they were unfairly edited to show him at his worst.

It is ironic that Mr Reagan

should have become disenchanted with the networks, to whom, in his normal role as a star television performer, he owes so much — possibly even his Presidency.

Two weeks ago, he publicly complained that "downbeat" news coverage had delayed the economic recovery and asked: "Is it news that some fellow out in South Succotash some place who had just been laid off should be interviewed nationwide?" Succotash, an American Indian dish made of maize and beans, was inevitably sought out by the Press.

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The costs and political implications of going to lead-free petrol in the UK mean that almost everyone concerned has an axe to grind. The grinding is becoming an increasingly noisy and public business. This makes it all the more remarkable that the facts of the case — meagre though they may be in some instances — should be so hard to come by.

The UK automotive industry, for example, has evidently made out to the Government a powerful case against unleaded petrol, arguing that the total cost of such a move to car manufacturers could be as high as £350m. It has embroidered its case with the threat that BL might have to be given yet more taxpayers' money to redesign engines so they could run on unleaded petrol.

It should also strengthen some of its departmental press offices — which vary widely in their competence. One of the main ways in which governments can reach a wide audience is via newspapers, radio and television. Opportunities to disseminate factual information — particularly on a subject that so intimately concerns people as children's health — should be seized with both hands.

Supporters of CLEAR may or may not be right in demanding a simultaneous government commitment to both a reduction of lead in petrol and a switch to unleaded fuel for new cars. But their appeal has certainly struck a chord — witness the findings of the latest MORI poll when 77 per cent of those questioned were found to favour lead-free fuel, even though this would push up petrol prices.

Unless all the interested parties — and most notably the Government — are forthcoming with their facts, CLEAR will win the argument by default. That is not the way for an issue of this importance to be settled.

Lombard

Lead: more facts are needed

By Sue Cameron

THE ISSUE of whether or not Britain should switch to unleaded petrol is a complex one. Some say the medical evidence is strong enough to justify a ban on lead additives in fuel. Others have serious doubts about the worth of the research that has been done so far. They rightly point out that there are many other sources of lead besides petrol fumes.

In the 1970s the legal limits on lead in petrol were progressively reduced by 0.05 grams per litre — a process that was contemptuously referred to as "salami-slicing." The Government reckons it has taken a bold initiative with its plans to lower the limit from 0.4 grams of lead per litre of petrol to 0.15 — a cut of 82 per cent. But instead of praise, it is finding itself faced with mounting hostility from worried parents.

The Government gave its reasons for reducing rather than banning lead in petrol during a comparatively brief Commons debate. But if it is to convince the public of its case and assuage what could be unnecessary fears, it should make available all the evidence on which its decision was based, including any relevant information it received from companies such as BL.

It should also strengthen some of its departmental press offices — which vary widely in their competence. One of the main ways in which governments can reach a wide audience is via newspapers, radio and television. Opportunities to disseminate factual information — particularly on a subject that so intimately concerns people as children's health — should be seized with both hands.

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Letters to the Editor

A radical alternative to the problems of the CAP

From Mr V. Gaskell

Sir — Your editorial "A better way to help farmers" (March 30) comes at a most opportune moment.

In the wake of Denmark's misfortune — foot and mouth in Flanders — in Britain's pig industry await with trepidation those extra pigs converted to bacon which other more protective countries have refused to accept. Those pigs will reduce our prices, so we the British pig industry will be helping to pay for their disaster.

So long as the Common Agricultural Policy makes the more fair-playing member countries into "sacrifice" lambs, public opinion will turn against the EEC and passions in Brussels will vary from high indignation to despair.

The concept of equalising food production circumstances in countries as varied as those in the EEC is ridiculous. Anyone with the remotest understanding of agriculture knows that temperature, moisture and light are the essential natural elements for growing things and that man adds fertiliser and tills the ground. Even the EEC can-

not make it rain harder in Sicily or grow olives in Ulster. The sooner politicians face up to reality and accept that the concept of equal opportunity in farming throughout the EEC is unfair and involves either the destruction of parts of its existing structure or enormous subsidy, the more likely we are to be able to look forward to a prosperous, politically united Europe fulfilling the EEC's original ideals.

If however sectional interests in one state triumph over those in another, disintegration and disunity must follow. In our case the pig sector will decline. Negative attitudes will replace positive ones and we will cease to have the incentive to go out into the market place to sell our bacon and hamper our industry.

Gaskell Bros, Wootton, Warrington, Cheshire.

From Mr D. Patchett

Sir — Your lead of March 30 was right to highlight once again, the problems associated with the common agricultural policy (CAP).

D. M. Patchett, University of Oxford, Institute of Agricultural Economics, Dartington House, Little Clarendon Street, Oxford.

zero coupon loans or even stocks with a negative coupon. These latter would be called savings loans and would show the volatility normally associated with partly paid stocks (which is what they would be). If such stocks were redeemed by annual drawings they would have yet more appeal for the risk-lover.

Providing a spread of stocks to suit the temperaments of different investors would be a positive step towards cutting the costs of debt funding and thus reducing the PSBR.

Martin Weale, Department of Applied Economics, University of Cambridge, Sidgwick Avenue, Cambridge.

What about the gamblers?

From Mr M. Weeks

Sir — Before the excitement over indexed gilts dies down completely may I make a plea for the Government to adopt a more innovative approach to funding. Indexed stocks appeal to the risk-averse investor who is prepared to accept a lower rate of return than he would on ordinary gilts because of the reduced risks involved.

But what about the gamblers among us? Low coupon stocks are more volatile than high coupon stocks and those who enjoy risk will buy these at a premium because of the added excitement. Indeed there is no reason why we should not have

shares have declined by that much less.

Today's share prices are based on two principal factors: expected future corporate returns measured in terms of free cash flows distributable to investors over time, and the risk associated with a capitalisation rate or required rate of return. We believe that it has been a substantial increase in the second factor, much more than a decline in the first.

Factors in current share prices

From the President, Chase Financial Policy

Sir — In commenting on the tax examination of the pros and cons of dividends, Mr R. A. Hammond — Chambers (March 29) asserts that US directors follow a dividend policy of less than 2.5 per cent. If only rarely is dividend cover greater than 2.5.

More importantly, he asserts that all earnings should rightfully be paid out as the just property of shareholders, especially because retained profits have not been capitalised in company share prices. Clearly share prices have performed poorly. But had dividends not been paid, the serious research on the market's behaviour indicates that shares would have declined by that much less.

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What about the gamblers?

From Mr M. Weeks

Sir — Before the excitement over indexed gilts dies down completely may I make a plea for the Government to adopt a more innovative approach to funding. Indexed stocks appeal to the risk-averse investor who is prepared to accept a lower rate of return than he would on ordinary gilts because of the reduced risks involved.

But what about the gamblers among us? Low coupon stocks are more volatile than high coupon stocks and those who enjoy risk will buy these at a premium because of the added excitement. Indeed there is no reason why we should not have

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£3.3m increase by Laird Group

SECOND-HALF taxable profits of the Laird Group rose from £5.14m last time to £9.19m, giving record figures of £16.85m for the year ended December 27, 1981 compared with £15.57m previously. Turnover for the 12 months climbed by £78.2m to £272.2m.

As forecast in August, at the time of the rights issue to raise around £16.6m net, a final dividend of 2p (1.85p) per ordinary stock unit is being paid. This raises the total net payment from 3.7p to 4p.

After tax of £3.96m, against £3.75m, net profits were ahead by £3.06m to £12.88m. The tax charge included overseas tax of £2.26m. Stated earnings per stock unit improved by 0.8p to 1.8p.

Extraordinary debits showed a decrease from £21.7m to £0.75m—the 1980 figure included an £11m charge for the closure of the Patent Shaft Steel Works.

See Lex

Sunbeam Wolsey up sharply

PRE-TAX profits of Cork-based hosiery and knitwear maker, Sunbeam Wolsey, more than doubled from £167,550 to £676,130 for 1981, including an employment subsidy of £215,085, against £302,950. Turnover increased from £22.01m to £24.12m.

Dividends absorbed £2.83m (£2.1m) leaving a retained surplus of £9.27m, compared with £4.02m.

Net assets per ordinary stock unit increased from 10.11p to 11.78p at the year end.

The group reports that it has received all of the £3.4m final settlement as compensation for its 50 per cent holding of ordinary shares in Cammell Laird Shipbuilders, which was nationalised in March 1977.

In current cost terms, after tax profits for the year were £9.6m and earnings per stock unit were 14.2p.

The group's interests cover transport systems, motor components, specialist engineering products and service industries.

See Lex

More Company News Page 23

trading conditions and an elimination of absenteeism and production problems, a higher second half figure was hoped. Second half results, however, are traditionally better than the first.

Yearly earnings per 25p share rose by 2.4p to 6.4p, and the dividend is stepped up from 2p to 3p net.

Tax took £55,106 (£71,970 credit) for the year and minor credit accounted for £34,557 (£3,112). Extraordinary items added £27,345 (£33,155) and this amount was again transferred to capital reserve.

After deducting preference dividends of £66,445 (£70,960) and ordinary payments of £237,442 (£153,295), the retained surplus came through ahead at £272,280, compared with £159,542.

In the '80s Wilfred became managing director of Hadfield Paints, later taken over by Bestobell. He joined Buck and Hickman in 1970 as managing director only to have that company whizzed from under him a year later by Sterling Credit. The same year he bought 30 per

cent of Reeves and Sons, manufacturer and distributor of artists materials. That company was sold five years later to Reckitt and Colman, but from then Wilfred set up his own art materials business with two retail outlets.

The two brothers have worked closely together over the years but the catalyst for bringing the two separate companies together was Arts' purchase of three Craftsmith shops from W. H. Smith for around £250,000 in February 1981. Electronics specialised with the money to finance the deal.

Cass Electronics, specialising in internal communications systems for industry and the health care market, has a fashionable enough track record to its sponsors to think in terms of a fairly fancy rating. But a fifth of profits come from the less glamorous area of arts and crafts shops. Savory will be making a placing in the next few days, raising around £1m half of which will go to the founders and dealings on the USM are likely to start after Easter. The brokers will probably opt for a price that will give an earnings multiple in the high teens, and a market capitalisation of over £6m on pre-tax profits of £0.75m.

The rather odd-ball trading mix has come together because of family ties. Mr Eric Cass founded Cass Electronics in the mid-'50s. His brother, Wilfred, was a director of Electronics ever since its inception though his career has taken him into wider fields.

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Dates when some of the more important company dividends statements may be expected in the next few weeks are given in the following table. The dates shown are those of last year's announcements except where the forthcoming board meetings (indicated thus) have been officially published. It should be emphasised that dividends to be declared will not necessarily be at the amounts in the column headed "Announcement last year."

	Date	Announce- ment last year	Date	Announce- ment last year	
Akroyd and Smithers	May 11	Int. 3.5	Hunsley and Palmer	Apr 5 Final 2.44	
Assoc. Indus.	May 12	Int. 0.8	*Kwik Savo Discount	May 6 Int. 1.8	
BAT Inds.	Apr 29	Int. 6.5	Laing (Johns)	May 1 Final 1.85	
Bank of Ireland	May 14	Final 3.5	Laing Inds.	Apr 22 Final 3.5	
Bank of Scotland	Apr 13	Final 9.5	London Brick	Apr 8 Final 2.82	
Barrow Hepburn	Apr 15	Final 1.4	Low and Bonar	Mar 29 Final 9.5	
Blackwood Hodge	Apr 14	Final 1.5	*Mansfield (John)	Apr 20 Final 5.0	
Blue Circle Inds.	Apr 29	Final 10.0	Morgan Crucible	Apr 16 Final 3.0	
Bowater	Apr 6	Final 7.25	Mowlem	Apr 30 Final 6.85	
British Home Stores	May 11	Final 2.75	*NEI	Apr 13 Final 2.5	
British Printing	Apr 10	Final 1.6	Pearl Assurance	Apr 14 Final 13.0	
British Sugar	May 12	Int. 7.5	Pearson Longman	May 5 Final 4.88	
Brixton Estates	May 5	Final 1.89	Pearson (S.)	May 5 Final 6.25	
Brown Bovis Kent	Apr 10	Final 1.2	P & O	May 7 Final 5.0	
Brown (Matthew)	May 7	Int. 1.35	*Phoenix Asce.	Apr 7 Final 4.4	
Burnell Costs	May 13	Final 2.8	*RMC	Apr 21 Final 5.3	
Burns Commodities	May 5	Int. 5.0	*RMC (A.)	Apr 6 Final 2.48	
Cold Refining	Apr 14	Final 2.5	Rio Tinto-Zinc	Apr 15 Final 10.5	
Corus	Apr 21	Final 7.5	Royal Bank Scotland	May 7 Int. 2.4	
Deutscher Dunlop	Apr 23	Final 1.35	Rutherford	Apr 7 Final 2.65	
Electro Stores	Apr 21	Final 2.7	Rugby Pordland Cement	Apr 5 Final 2.5	
European Ferries	May 11	Final 3.45	Sainsbury (J.)	May 5 Final 5.0	
Expanded Metal	Apr 7	Final 2.5	Samuel Probs.	May 1 Int. 1.2	
Glen Globe	Apr 5	Int. 3.75	*Scot	Metropolitan	Apr 6 Int. 1.25
Metropolitan	May 14	Final 6.8	Sears Holdings	May 11 Final 1.6	
Hambro Life	Apr 14	Final 2.2	*Senior Eng.	Apr 6 Final 0.75	
Hall (Matthew)	May 6	Final 6.552	Simon Eng.	Apr 27 Int. 3.7	
Hammerson	Apr 1	Final 6.5	*Smith (W. H.)	Apr 21 Final 3.2	
Hawker	May 1	Final 4.0	*Sun Alliance	Apr 7 Final 18.0	
Hawker Siddeley	Apr 15	Final 6.2	*Tarmac	Apr 27 Final 10.5	
Hawker Siddeley (J.)	May 5	Int. 0.79	Taylor Woodrow	Apr 9 Final 10.57	
Higgs and Hill	Apr 6	Final 2.8	Telephones	Apr 21 Final 2.5	
Hill	Apr 29	Final 4.6	*Tosco Kemley	Apr 21 Final 0.75	
Hill	Apr 29	Final 4.6	Tralig House	May 13 Int. 3.0	
Hill	Apr 29	Final 4.6	Hammer Prop.	May 1 Final 6.5	
Hill	Apr 29	Final 4.6	UDS Vaux	May 7 Final 3.61	
Hill	Apr 29	Final 4.6	Breweries	May 8 Int. 2.5	
Hill	Apr 29	Final 4.6	*Wair	Apr 5 Final nil	
Hill	Apr 29	Final 4.6	*Wimpey (G.)	Apr 29 Final 1.7	

* Board meeting intimated. † Rights issue since made. ‡ Tax free. § Corp issue since made. || Forecast.

Stanley Miller recovers some of lost ground

ALTHOUGH INCREASING its second half pre-tax profits from £54,339 to £115,760, the Newcastle-upon-Tyne building contractor and civil engineer, incurred a loss of £72,486 in 1981. In the previous 12 months, the group had profits of £59,985.

Turnover fell slightly from £16.94m to £16.85m. There was an operating loss of £242,480 against profits of £56,862. Assets' profits amounted to £10,894 compared with losses of £10,637.

There was a tax credit of £57,000 which was well down on the previous year's £466,521, and this resulted in a net loss of £15,886 (£526,506 profit) after minorities of £1,639 (£1,768). The

loss per 10p share was 0.28p (earnings 5.75p).

Dr N. R. Bell, who became chairman recently following the death of Mr E. Bell, says trading in the second half was substantially improved on that of the first, though not sufficiently fully to recover the loss made in the earlier period.

He says Stanley Miller Arabia had a very successful year. Its turnover trebled and the previous year's loss was converted into a profit.

The loss for UK operations was minimal. He says the order book is satisfactory and at a level which should maintain turnover. He expects the group as a whole to improve its performance in the current year.

The Scottish Eastern Investment Trust



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INTERNATIONAL CAPITAL MARKETS

INTERNATIONAL BONDS

Offered only business in Mexican floaters

AT FIRST there were only rumours. In a hushed tones dealers in the Eurodollar floating rate note market passed the word that they were pulling out of trading Mexican paper. But now the rumours have been confirmed as reality. A number of the leading dealers have stopped making a market in Mexican floating rate note issues (FRNs).

Although the cessation of such trading is not of major consequence to the entire Euro-market, it can do little good for the gradually deteriorating name of Mexican borrowers in both the bond and credit markets.

The main reason for the recent halt by several market-makers is the growing illiquidity of Mexican floating rate notes. There are several factors behind this:

• The economic image of Mexico has become tarnished over the past few months in view of the fall in oil prices, the devaluation of its currency and the country's growing budget requirement.

• Many banks, the ultimate buyers of the FRNs, are "full up" with Mexican paper. "We are up to our eyebrows," commented one banker.

• The recent surge in new FRN issues (see chart) has led some dealers to cut their weakest and least liquid paper and move to other issues. Mexican paper has suffered.

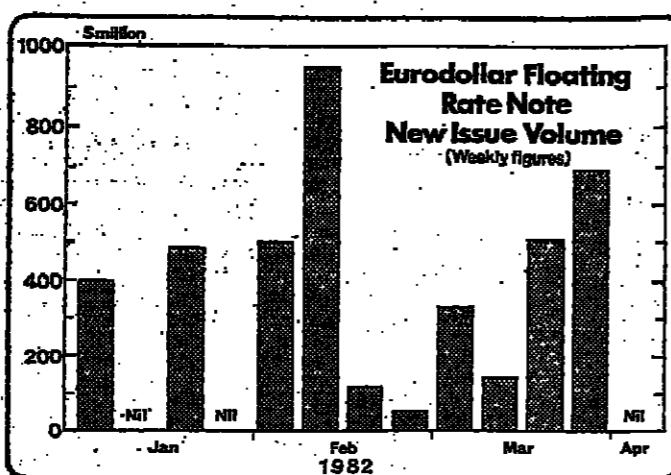
• The effective margins on Mexican floating rate note paper have risen and the prices have fallen correspondingly. Many investors have switched to higher yielding fixed-rate Mexican paper such as the recent 174 per cent Banobras issue.

• Some Euromarket houses have decided to support only the Mexican FRNs they have actually managed.

The result of all this is that the trade in Mexican FRNs is no longer a two-way business. Several traders report that business has turned into "offered only."

Six months ago the average spread of a standard Mexican floater may have been around 0.45 to 0.50 per cent points above the London interbank offered rate (Libor). But now the offered price of several issues is putting the spread closer to one per cent point above Libor.

An example is the Nafinsa



1982 paper, one of the few issues still being traded. The notes carry a 1 point spread above Libor, and are trading currently in the 97½ to 97¾ range. At 97½ the effective spread comes to nearly one percentage point.

When prices fall the trading liquidity may dry up. When the market expects a spread of around 1 per cent the prices are likely to stay low and the liquidity therefore nearly disappears.

A major FRN market-maker said on Friday: "There seems to be a complete lack of customer interest in Mexican paper." Several competitors agreed and said the short-term outlook was not expected to change.

In the fixed-rate Eurobond market the first day of April brought a surge in investor demand. After a sluggish start last week the Eurodollar sector rebounded on Thursday and Friday and closed the week 1 point to 1 point higher. The Euro-D-Mark sector continues to be strong: prices were up 1 point on the week. The Swiss franc sector saw prices up 1 point on the week.

On the other side of the world the Japanese government bond market saw prices fall by around

Alan Friedman

CREDITS

Belgium tests the waters

THE KINGDOM of Belgium is borrowing £100m through a five-year sterling syndicated credit managed by Hill Samuel and Baring Brothers. The margin above the London interbank offered rate (Libor) will be 1 per cent and the deal is fully underwritten and in syndication.

The other banks involved are Barclays Bank, Royal Bank of Canada, Dalwa, Saitama Bank, Banque Belge Limited, and Banque Bruxelles Lambert.

It is well known in the Euro-market that Belgium has been contemplating a jumbo credit and this comparatively small deal may be a way of testing the waters.

Elsewhere in Europe the action shifts tomorrow to Dresdner Bank's Frankfurt offices in Juergen-Ponte-Platz where more than 100 bankers and Polish officials will converge at 10 am to sign Poland's 1981 debt rescheduling agreement.

But as the bankers gather in Frankfurt, there are other matters in Eastern Europe which may soon merit their attention.

The Euromarket was awash with rumours on Friday of a large loan from the Western European central banks to Hungary. On Friday evening Mr Janos Pekete, first vice-president of the Hungarian National Bank, is said to have stated he

had "not heard these reports."

Romania's group of nine Western bank advisors, meanwhile, will be meeting in New York in fortnight to discuss ways of organising that country's debt rescheduling.

In Lisbon, the much-awaited mandate for Portugal's \$300m eight-year credit was awarded to a group of ten banks. Citicorp is agent and Lloyds Bank International is running the books.

The other banks are the Bank of Tokyo, Fuji Bank, Industrial Bank of Japan, Banque de l'Indochine et de la Suez, Commerzbank, Gulf International Bank, National Westminster Bank, and the Banco Portugues do Atlantico.

The Portuguese have also negotiated a \$25m acceptance credit for CNTF, the state-owned petrochemicals company. The two-year credit, bearing a 1 point acceptance commission, was placed by Lloyds Bank International.

Pemex's \$2bn jumbo was signed late last week, but the Mexican oil company also attempted a \$200m club deal through Banamex. This was withdrawn by Friday, only a few days after reports of its first emerged.

The \$200m two-year Eurocredit was viewed by some bankers as a curious "second bite of the cherry." It was in the pipeline before the oil was even dry on the \$2bn deal, and while Nafinsa's \$1.2bn credit was still in the market.

Alan Friedman

ASIAN CURRENCY UNITS

Singapore undeterred by Hong Kong's relaxation

SINGAPORE'S offshore financial markets are shrugging off suggestions that business will suffer from Hong Kong's recent abolition of its 15 per cent withholding tax on interest payments. Official statistics over the next six months or so will show how much business may be leaving Singapore, as maturities fall due. Neither the foreign bankers nor the Singapore authorities are expecting this to be a flood, although older hands point out that it was in large measure the Hong Kong withholding tax that prompted the development of foreign bank's Asian Currency Units (ACUs) from 1983 onwards.

It seems likely now that there will be some blurring of the traditional distinction between the two centres—where Hong Kong has tended to set up a loan syndication, Singapore has been used as a funding centre, a shorter-term money market, and a centre for the issue, mainly though not exclusively by Asian borrowers, of certificates of deposit, bonds and notes.

ACU's now number almost 200 in Singapore, with newcomers still arriving, and the collective investment this represents on the part of the international

banking community is probably great enough to ensure that business in Singapore will continue as before. Whether all are making money is a moot point. Only one (a well-known German bank active in the gold market) has recently reported a slight loss. Yet many banks are expected to find their money market business contracting this year, and those which have not found other ways of making money may have to decide whether to content themselves with a mere presence in the still rapidly growing South-East Asia region.

Forecasts for the current year are mixed. During January, the latest month for which the Monetary Authority of Singapore has published statistics, total assets and liabilities of the ACUs actually fell from an average of U.S.\$85.8bn to U.S.\$84.5bn. This is the first time the market has so much as paused for breath in five years of rapid expansion. Some bankers think a plateau has now been reached, and not everyone is sure that volume will hit the U.S.\$100bn mark in 1983.

As Singapore is quick to point out, much of this business is merely "booked" to ACUs by their parent banks elsewhere, so that the market's fortunes are impossible to dis-

entangle from those of the Euro-market. Thus spreads on loans to many Asian borrowers have been uncomfortably narrow for many bankers recently, while for the future, risk is being far more carefully assessed and some countries will find themselves being asked to pay more.

Yet bankers are confident that the rapidly expanding economies of the region, notably Malaysia, Indonesia, Thailand, and the Philippines, will all continue to have a hearty appetite for funds. As a seasoned European banker put it, "the problem for us will be to pick the good projects."

The Asia bond market, meanwhile, remains closely bound to U.S. dollar interest rate movements elsewhere. Dealers say there is plenty of pent-up demand for funds on the part of the Asian borrowers who have been the heaviest users of the market—mainly because their greater recognition in Singapore means they can secure better terms than in Europe. The market has been less inclined to innovate than London, but a recent U.S.\$18m note issue with warrants attached by DBS-Diwa for Seiyu, the Japanese stores group, went quickly and is expected to set a trend for new borrowing instruments.

Adrian Dicks

CURRENT INTERNATIONAL BOND ISSUES

Borrowers	Amount m.	Maturity	Av. life years	Coupon %	Price	Lead manager	Offer yield %
U.S. DOLLARS							
CNTF†	275	1990	8	5½	100	Societe Generale	5.250
Natomest†	50	1985	3	15	100	Morgan Guaranty, SBCI, Salomon Bros.	15.000
S. Carolina Electric and Gas	60	1989	7	15½	*	Kidder Peabody Int'l.	*
Bank of America	300	1987	5	12	90½	Bank of America Int'l., SBCI	14.820
Georgia-Pacific†	50	1987	5	14½	100	Blyth Eastman, Paine Webber	14.625
Bank of America	50	1987	5	15½	100	CSFB, Merrill Lynch, Lazard Frères NY	15.250
Transco Int'l.†	50	1987	5	16½	100	*	*
CANADIAN DOLLARS							
Simpson-Sears Acceptance†	40	1989	7	16½	100	Wood Gundy	16.750
Credit Foncier Canada†	30	1989	7	17½	100	Societe Generale de Banque, CSFB	17.125
Ville de Longueuil†	10	1988	6	17	100	Kreditbank	17.000
Montreal Transport	20	1987	5	16½	*	Bank Int'l. à Luxembourg	*
D-MARKS							
Asian Dev't. Bank†	150	1992	10	9½	99½	Deutsche Bank	9.330
Eurofins†	100	1992	10	9	99½	Deutsche Bank	9.080
SWISS FRANCS							
World Bank**†	300	1987	—	7½	100	CS	7.250
Sektau Prefab Homes†	70	1992	—	5½	100	UBS	5.750
IAD†	100	1992	—	7	100½	UBS	6.964
Aucala	80	1992	—	8	*	CS	*
CNE†	100	1992	—	7	100½	Soditic, Credit Lyonnais	6.930
STERLING							
Pemex†	30	1987	5	16½	100	Hambros Bank, SBCI	16.500
Credit Foncier de France†	50	2007	25	14½	99.393	Morgan Grenfell, County Bank	14.850
KUWAITI DINARS							
Richardson-Vicks†	7	1987	5	12½	100	KFTCIC, KJC, KUIC	12.250

* Not yet priced. † Final terms. ** Placement. † Floating rate note. § Minimum. \$ Convertible. †† Registered with U.S. Securities and Exchange Commission. † With warrants. Note: Yields are calculated on AIBD basis.

The Debentures have not been registered under the United States Securities Act of 1933 and may not be offered or sold in the United States of America, its territories or possessions or to nationals or residents thereof.

These Debentures having been sold, this announcement appears as a matter of record only.

MARCH 1982

U.S. \$400,000,000

American Telephone and Telegraph Overseas Finance N.V.

(Incorporated with limited liability in the Netherlands Antilles)

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Unconditionally guaranteed as to payment of principal, premium, if any, and interest by

American Telephone and Telegraph Company

(Incorporated in New York)

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Goldman Sachs International Corp.
Merrill Lynch International & Co.
Morgan Stanley International
J. Henry Schroder Wag & Co. Limited
Swiss Bank Corporation International Limited

Union Bank of Switzerland (Securities) Limited

American Express Bank	Astro International	Arnold and S. Bleichroeder, Inc.	Bache Halsey Stuart Shields	Julian Bear International
Banca Commerciale Italiana	Banca del Gottardo	Bank of America International	The Bank of Baroda, Ltd.	Bank Centrali Svizzera (CIS)
Bank für Gemeinschaftsbank	Bank für Gemeinschaftsbank	Bank für Gemeinschaftsbank (Osnabrück)	Bank Leu International Ltd.	Bank Leumi le-Israel Group
Bank Metz & Hoep NV	Bank of Tokyo International	Bankhaus Gottlieb Duttweiler	Banker Frères du Commerce Extérieur	Bank Leuviel-Dreyfus
Banque Générale du Luxembourg S.A.	Banque de l'Indochine et de Suez	Bankhaus Gottlieb Duttweiler	Bank Luxembourg S.A.	Bank Privé de l'Indochine
Banque de Nantais, Schleswig-Holstein, Münster	Banque de Paris et des Pays-Bas (Suisse) S.A.	Bankhaus Gottlieb Duttweiler	Bank Privé de l'Union Européenne	Bank Privé de l'Indochine
Bankhaus Rothschild	Bankhaus Rothschild en Suisse	Bankhaus Gottlieb Duttweiler	Bank Weidner	Bank Rothschild
Baring Brothers & Co.	Bayerische Hypotheken- und Wechsel-Bank	Bayrische Landesbank Girozentrale	Bayerische Versicherung	Bear, Stearns & Co.
Bank Bernberg, Gessler & Co.	Bergner Bank	Berliner Bank	Berliner Hand	

Market nerves still fraught

"A CONVERTIBLE subordinated debenture is a highly regarded junior colleague in Norway. It was incorrectly identified as a corporate investment tool in an earlier edition."

Amid all the doom and gloom, Wall Street found something to chuckle about this week: a spoof of its daily required reading called "Off the Wall Street Journal" which reported that take-over-happy Mobil had accidentally bid for a company it already owned, along with the tragic tale of a robot in a Japanese auto plant which committed hara kiri because its poor memory circuits made it forget the company song.

But for those who can tell a debenture from a set of false teeth, it was another frustrating week of seesawing prices but no fundamental change. Bond prices weakened and then strengthened a little. But short-term interest rates remained stubbornly high and prevented whatever bullish impulses there were from making any headway. Fed funds averaged nearly 16 per cent, some two points higher than the week before as end-of-quarter pressures clogged up the banking system.

The sharp drop in the money supply on Friday was a nice piece of news to go home with for the weekend. M1, the main measure, fell \$3bn. But it had been anticipated, and left the market little changed. The major worry remains the big bulge which has been predicted for the middle of this month when people liquidate investments in advance of the April 15 tax payment deadline.

Now was there much encouraging news from Washington, where Congress broke up for its two-week Easter recess without having made any progress on the budget. Even though President Reagan said at his press conference on Wednesday night that he was not being an inflexible "stone face," it is still far from clear where compromise can be reached to narrow the \$100bn plus budget gap that looms ahead.

The Federal Reserve Board held another of its closed door policy-making meetings last week, the results of which will not be known for some time. However, as is customary, the Fed released the minutes of its previous meeting in February which showed that it was hoping

New issues boost for fund totals

By Alan Friedman

NEW FUNDS raised on the international capital markets were by more than 50 per cent in the first quarter of this year to \$39.5bn, from \$26bn in the first quarter of 1981, according to the latest figures compiled by the Organisation for Economic Co-operation and Development (OECD).

The rise was due largely to the growth of bond issues in the first quarter. New issues for the first three months of 1982 stood at \$19.1bn against \$8.96bn last year.

The OECD says that \$12.4bn of new funds were raised on the international capital markets in March, a decline of \$900m on the \$13.3bn raised in February.

The Mexican State oil monopoly, Pemex, has signed an agreement for a \$2bn loan from a group of 132 international banks, it was announced in Mexico City, reports Reuter.

Pemex said the agreement was signed in New York by Sg Julio Moctezuma Cid, head of Pemex, and Mr Walter Wriston, president of Citicorp International, lead manager of the syndicated loan.

PepsiCo, the soft drinks company which set off the fashion

for zero coupon notes last year, sold \$850m more of them in a series with maturities ranging from six to 30 years, which is thought to be the longest maturity yet on a zero coupon issue.

Du Pont, the large chemical company which has huge financing needs following its recent acquisition of Conoco, took advantage of the new shelf registration rule to file for \$1bn of debt securities which it will sell periodically. The rule allows borrowers to make a single filing for several proposed debt issues, rather than file singly for each one. Apart from saving time and money, this enables the borrower to move swiftly if a borrowing window opens up in the market—something which is rare these days.

David Lascelles

U.S. INTEREST RATES (%)
Week to Week to
Apr 2 Mar 26
Fed. funds wky. av. 10.00 9.24
3-month Treasury bills 13.24 13.00
3-month CD 14.55 14.50
30-year Treas. bonds 13.58 13.48
AAA Util. 16.12 16.13
All Industrial 15.50 15.38
S&P 500 Bonds 15.50 15.38
in the week to March 24 M1 fell \$3bn
in \$445.9bn.

European chief for General Foods Corp.



Mr John M. Keenan

GENERAL FOODS CORPORATION has appointed Mr John M. Keenan, group vice-president, as president of General Foods Europe, Brussels. He succeeds Mr Ervin R. Shames, who was recently elected executive vice-

Barlow Rand move to take control of Tiger Oats

BY THOMAS SPARKES IN JOHANNESBURG

IN A complex series of deals which will tie up control of the last remaining independent major food company in South Africa, control of Tiger Oats is to be taken by the industrial and mining conglomerate, Barlow Rand. At the centre of the arrangements is the formation of a new company to be called Tiger-Sugar which will control the entire capital of C. G. Smith Sugar and more than 50 per cent of the issued capital of the food group, Tiger Oats.

Present shareholders in Tiger Oats are to be offered one new share in Tiger-Sugar for each Tiger Oats share they hold. The Old Mutual, which is South Africa's largest life assurance company and which holds 40 per cent of Tiger Oats' equity,

has agreed to take Tiger-Sugar shares for its entire holding.

In addition, the Old Mutual has accepted the second leg of the basic deal offered to Tiger Oats shareholders, which is to exchange half the Tiger-Sugar shares it received for new Barlow Rand shares on the basis of two Barlow Rand for each Tiger-Sugar.

At present Tiger Oats has

11.5m ordinary shares in issue as well as 1.8m automatically convertible preference shares. All of these are included in the arrangements.

C. G. Smith Sugar is a wholly-owned subsidiary of C. G. Smith which, in turn, is at present a 54 per cent-owned subsidiary of Barlow

Rand. Because of this, Barlow is to offer to exchange up to 50 per cent of each minority shareholder's interest in ICS.

Barlow Rand will then exchange the Tiger-Sugar, Nampak and ICS shares according to it for an issue of new C. G. Smith shares. The end result will be that Barlow Rand will own more than 54 per cent of C. G. Smith which in its turn will have more than 50 per cent of Tiger-Sugar, 50 per cent of Nampak, a direct stake of more than 27 per cent in ICS, and a further 20 per cent of ICS indirectly through Tiger-Sugar and Tiger Oats.

At present, Barlow Rand has 126.2m ordinary shares in issue which have a total market capitalisation of R1.23bn. In the year ended September 30, 1981, the group's consolidated turnover was R4.572m and its pre-tax profit R63.3m. C. G. Smith has 33.7m ordinary shares in issue which are worth R530m on last Friday's closing price.

In the year ended September 30, 1981, its consolidated turnover was R1.2bn and its pre-tax profit R19.6m.

Storting decision on Reksten still leaves option open

BY OUR OSLO CORRESPONDENT

THE REKSTEN AFFAIR is not years out of Norwegian politics, even

if the Storting (Parliament) early on Friday morning endorsed an agreement between the Norwegian states and Hambros Bank, London, which is to reduce the losses Norway

is suffering in connection with the matter.

An investigating committee appointed last year by the Labour Government then in power in Norway is expected to present a report on the Reksten Affair later in the year, and it is believed that this report will be thoroughly debated in the Storting.

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Such information could be revealed by the investigating committee, but legal experts in Norway have stressed that an eventual court case against

Hambros should last for several

The agreement involves the transfer by Hambros to Norway of assets amounting to about \$40m. The Conservative Government wanted to sign this agreement because it considered it the best possibility to reduce Norwegian losses. Political parties to both the left and right of the Government, however, went against the agreement because they thought it would damage the Norwegian states' reputation in the eyes of foreign banks, financial institutions, and companies in general.

After a 12 hour debate—the fiercest in Norwegian politics for many years—the agreement was endorsed with a majority of one. During the debate Mr Arne Skauge, the Minister of Trade and Shipping was in particular subjected to bitter criticism, claiming that he had not kept the Storting fully informed about recent developments in the Reksten affair.

The Socialist Left party proposed a vote of no confidence but was not backed by other political parties.

Following the Zambian Government's decision to merge Nchanga Consolidated Copper Mines (NCCM) and Roan Consolidated Mines Limited (RCM), Mr Francis Kaunda, managing director of NCCM, has been appointed chairman and chief executive of ZAMBIA CONSOLIDATED COPPER MINES (ZCCM).

Mr L. C. Mutakasha, managing director of the Metal Marketing Corporation of Zambia, Professor N. M. Siamwiza, professor of chemistry at the University of Zambia, and Mr B. R. Kuyani, governor of the Bank of Zambia, have been appointed non-executive directors of ZCCM.

THE FEDERAL RESERVE BANK OF CLEVELAND has appointed Ms Karen N. Horn as its president from May 1. She is the first woman president of any of the 12 Federal Reserve Banks. She succeeds Mr William J. Wind, who retires. Ms Horn is treasurer of Bell Telephone Company of Pennsylvania.

PERO-WALLSEND. Sydney has appointed Mr Alan Gordon Coogan a director to fill a casual vacancy on the board. He is chairman of Nabalo Pty.

Mr Maurice LeClair

RAILWAY has appointed Mr. Maurice LeClair as president and chief executive officer from April 1. He will also sit on the company's 12-member board. He replaces Mr Robert Bandeen, who has resigned.

FT INTERNATIONAL BOND SERVICE

All these securities having been sold, this announcement appears as matter of record only.



Societes de Développement Régional

Societe de Développement Régional du Nord et du Pas-de-Calais
Société Alsacienne de Développement et d'Expansion SADE
Société de Développement Régional du Centre-Est CENTREST
Société de Développement Régional Lorraine LORDEX
Société de Développement Régional de l'Ouest SODERO
Société de Développement Régional du Sud-Est
Société de Développement Régional de Normandie
Société de Développement Régional du Sud-Ouest EXPANSO SDR
Société de Développement Régional du Sud-Ouest SODILER
Société pour le Développement Économique du Centre et du Centre-Ouest SODECCO
Société de Développement Régional de la Bretagne
Société de Développement Régional Méditerranée
Société de Développement Régional de Champagne-Ardenne CHAMPEX
Société de Développement Régional du Sud-Ouest TOFINSO SDR

£30,000,000 15% per cent. Guaranteed Bonds 1992

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Morgan Guaranty Ltd. Nomura International Limited

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Banque de l'Union Européenne Banque Worms Barclays Bank Group Baring Brothers & Co. Banca Commerciale Italiana
Barclays Handels- und Finanzierung Bank Cazenove & Co. Chase Manhattan CIBC Citicorp International Group Commerzbank
Compagnie Financière et d'Investissement, CHS Continental Illinois Credit Commercial de France Crédit Industriel et Commercial Crédit du Nord
Credicard-Bankers Trust Dresdner Bank Dresdner Bank-Warburg Dresdner Banking Company EFG International Finance Ltd. Geofina International Ltd.
Genossenschaftliche Zentralbank AG Giovanni and Bank of the Schweizerischen Spezialbank
HJB International Kiddie, Penhock International Ltd. Kreditbank S.A. Luxembourg Lazard Brothers & Co. Lazard Frères et Cie
Lehman Brothers Kuhn Loeb International, Inc. LTCB International Manufacturing Hanover Merrill Lynch International & Co. R. Metzler und Sohn & Co.
Mitsubishi Bank (Europe) S.A. Mizuho Finance Europe Samuel Montagu & Co. Morgan Stanley International Nederlandsche Middenstandsbank N.V.
The Nikko Securities Co. (Europe) Ltd. Nikko Credit International (NCI) Ltd. Nippon Royal Bank
Postbank Salomon Brothers International Scandinavik Bank J. Henry Schroder Wagts & Co. Simon & Coates
Société Générale de Banque Société Sécurité de Banque Strauss, Tunbill & Co. Standard Finance International
Union Bank of Switzerland (Swissbank) Vontobel und Westenbank M. M. Warburg-Braunwirth, Witts & Co. Warburg Paribas Becker
Westdeutsche Landesbank Commerzbank Wood Gundy Yamada International (Europe)

U.S. DOLLAR STRAIGHTS

Issued Bid Offer day week Yield

Anheuser-Busch 161/2 160 102/3 103 +0% -0% 15.73

APS Fin Co 171/2 26 105 104/5 105 -0% -0% 15.74

APS Fin Co 16 25 102 104/5 104 +0% -0% 15.47

APS Fin Co 15 25 98 102/3 104 +0% -0% 15.27

AT&T 14 25 100 104/5 105 +0% -0% 15.16

Baker Int'l Fin. 0 32 225 245/8 245 +0% +0% 15.05

Bank Montreal 161/2 91 190 102/3 103 +0% -0% 15.63

Bar. Colum. Hyd. 151/2 88 100 102/3 103 +0% -0% 15.65

Bar. Colum. Hyd. 17 97 54 102/3 102 +0% -0% 16.47

Bar. Colum. Hyd. 18 97 54 102/3 102 +0% -0% 16.45

Bar. Colum. Hyd. 19 97 54 102/3 102 +0% -0% 16.43

Bar. Colum. Hyd. 20 97 54 102/3 102 +0% -0% 16.41

Bar. Colum. Hyd. 21 97 54 102/3 102 +0% -0% 16.39

Bar. Colum. Hyd. 22 97 54 102/3 102 +0% -0% 16.37

Bar. Colum. Hyd. 23 97 54 102/3 102 +0% -0% 16.35

Bar. Colum. Hyd. 24 97 54 102/3 102 +0% -0% 16.33

Bar. Colum. Hyd. 25 97 54 102/3 102 +0% -0% 16.31

Bar. Colum. Hyd. 26 97 54 102/3 102 +0% -0% 16.29

Bar. Colum. Hyd. 27 97 54 102/3 102 +0% -0% 16.27

Bar. Colum. Hyd. 28 97 54 102/3 102 +0% -0% 16.25

Bar. Colum. Hyd. 29 97 54 102/3 102 +0% -0% 16.23

Bar. Colum. Hyd. 30 97 54 102/3 102 +0% -0% 16.21

Bar. Colum. Hyd. 31 97 54 102/3 102 +0% -0% 16.19

Bar. Colum. Hyd. 32 97 54 102/3 102 +0% -0% 16.17

Bar. Colum. Hyd. 33 97 54 102/3 102 +0% -0% 16.15

Bar. Colum. Hyd. 34 9

Companies and Markets

UK COMPANY NEWS

Ulster TV ahead £66,000

THE subscription to the new Channel 4 and a substantially increased rental to the Independent Broadcasting Authority will cost Ulster Television something in the region of £100,000 in the second half of the current year ending July 31 1982, says Mr J. L. MacQuilty, the chairman.

In his interim statement, he says these costs would not be offset by any advertising revenue from Channel 4 as it would not begin transmission until November. Despite this, the company, which is the television programme contractor for Northern Ireland, expects television operating profit for the second half to be not less than that for the corresponding period last year.

The company's interim figures show an increase from £361,000 to £397,000 in pre-tax profits for the half-year to January 31 1982. Investment income, at £71,000, was marginally lower and profits on disposal of investments were well down at £13,000 against £34,000. Turnover rose from £4.37m to £5.32m. The interim dividend is raised from 5p to 3.5p — last year's total was 6p from pre-tax profits of £355,000.

Pre-tax television operating profits increased from £225,000 to £313,000, but Mr MacQuilty points out that while this improvement is encouraging, it is still below the corresponding figures of £345,000 and £343,000 for 1978 and 1979 respectively.

He says advertising revenue, contrary to expectations, had held up remarkably well, which emphasised the value of advertisements and their agents found in the use of television. A new rate card, published this spring, shows the continuing confidence of the company's sales staff in being able both to increase revenue and attract new business.

Dealing with programmes, Mr MacQuilty says the local production continued as popular as ever, and covered a full cycle of programmes from entertainment through to education.

"It has not been our good fortune," he adds, "to be able to devote the amount of time to the first category as we would have wished but, in order to lighten the heavy burden of news, we have endeavoured to inject as much of 'normal life' into our news and news magazine pro-

UniChem's profits rise

Turnover of UniChem, the UK's largest pharmaceutical wholesaler, increased by 28 per cent from £185.1m to £216.8m in 1981, while profits were up 18 per cent to £16m.

The company, which is unquoted, distributed £14.2m to its member pharmacists in respect of the year — 26 per cent more than 1980.

Mr Peter Dodd, the managing director, says this year will be as competitive as 1981, but he is confident of giving member pharmacists an even better service with more benefits.

BIDS AND DEALS

Thos. Locker acquisition

Thomas Locker (Holdings) has purchased a 50 per cent interest in Associated Perfumers and Weavers from Butterfield Harvey for £555,000 cash.

In addition, a deferred loan of £242,000 in APN has been repaid to Butterfield.

The value of the assets being acquired amounted to £737,000 on March 31 1981. The results relative to the holding being acquired produced a loss of £131,000 for the year to March 31 1981.

APN, which makes perfumed materials and wire screens, has traded unprofitably in the nine months since that date but indications point towards marginal profits for the final quarter of 1981-82.

Spencer Gears sells lossmaker

Spencer Gears (Holdings) has sold its loss-making subsidiary Spencer Gears Ltd. to Hi-Ten Installs for £80,000 cash, payable by instalments. The SGL freehold factory at Sulgrave Road, Leicester, is not included.

The disposal will result in an extraordinary loss for the Spencer Gears group in 1981-82 of some £1.2m but the group will be disposing of a loss maker with liabilities to third parties other than trade creditors of over £800,000.

Borrowed interest relief grant, which is not receivable in 1981-82, the pre-tax loss of SGL for the year ended June 30 1981 was £391,000.

The loss, which has continued at a similar rate during the current year, was largely due to the recession which has affected the engineering industry particularly severely.

LONDON AND LIVERPOOL TRUST

London and Liverpool Trust has completed the acquisitions of LOS Office Supplies and T and T (Metal Products) — 243,461 ordinary shares in London and Liverpool have been issued.

SECURITY CENTRES

Security Centres Holdings has acquired, for a cash consideration, the business and assets of Marker Alarms of Glasgow.

This acquisition significantly enlarges Security Centres' successful Scottish operation.

LINFOOD DISPOSAL

Linfood Holdings has completed the sale of John North to Maxx and Overseas (Inv). Consideration satisfied wholly in cash.

NO PROBES

The acquisition by Norsk Hydro AS of the agricultural fertiliser division of Fisons, and the proposed merger between Endo Inc. and International Synthetic Rubber are not being referred to the Monopolies Commission.

SHARE STAKES

Lendu Rubber Estates — Johore State Development Corporation holds 287,500 ordinary (12.778 per cent).

Braid Group — B. R. P. Securities acquired a further 60,000 ordinary 'taking' holding to 200,000 (12 per cent).

Sturia Holdings — Family interests of R. A. W. Rudd increased by 26,666, bringing total to 66,666 shares.

BOARD MEETINGS

The following companies have notified dates of board meetings to the Stock Exchange. Such meetings are usually held for the purpose of considering dividends. Other meetings are not available as to whether dividends are interim or final and the subdivisions shown below are based mainly on last year's timetable.

TODAY

Intertex — Syntex, Glaxo, Highland Distilleries.

Finals — British Printing and Communication, Erith, Luis Gordons, Huntley and Palmer, S. Jerome, Macfarlane (Chairman), Rugby Portland Cement, George Willis.

FUTURE DATES

A.E. May 27
Peters Stores April 13
Finsbury April 13
Baldwin Concrete Machinery April 7
Burma Oil April 14
J. B. Holdings April 14
Lilley (F. J. C.) April 15
Renovex Inc. April 14
Rock Darton April 15
Spear and Jackson Instru. April 21
Steel Brothers April 22

IN BRIEF

CITY AND FOREIGN INVESTMENT — Results for 1981 reported February 15. Investments £3,682 (£2.05m). Net assets £620.2m (£27.2m). Shareholders' funds £3.72m (£3.05m). Meeting, 117 Old Broad Street, EC 2, noon.

NORTH BRITISH CANADIAN INVESTMENT — Final dividend for year to February 28 1982, 3.35p (3.05p) for a total of 5.1p (4.45p). Stated earnings per 25p share 3.35p (3.05p); net asset value per share 10.19p (9.35p). Gross revenue £203,425 (£205,121).

SPAIN

April 2

	High	Low	Price
350	335	Banco Bilbao	348
362	326	Banco Central	332
324	302	Banco Exterior	302
371	317	Banco Hispano	318
115	110	Banco Caja	115
367	341	Banco Santander	341
238	202	Banco Uruguay	202
355	355	Banco Vizcaya	355
245	127	Banco Zaragoza	244
62	59	Banco Sabadell	59
61.2	58.2	Banco Zinca	58.2
50	46	Gal. Preciosas	46
68.2	61.7	Hidroil	64
37.5	34.5	Industria	35.5
104.5	97	Montecatini	95.5
101	94	Peninsular	95
40	3	Sogefisa	3
74.05	70.5	Telefonica	71
62.5	59.5	Union Elect.	63.7

STOCK EXCHANGE BUSINESS IN MARCH

Stock Exchange turnover soars to record £22.7bn after Budget

BY NIGEL SPALL

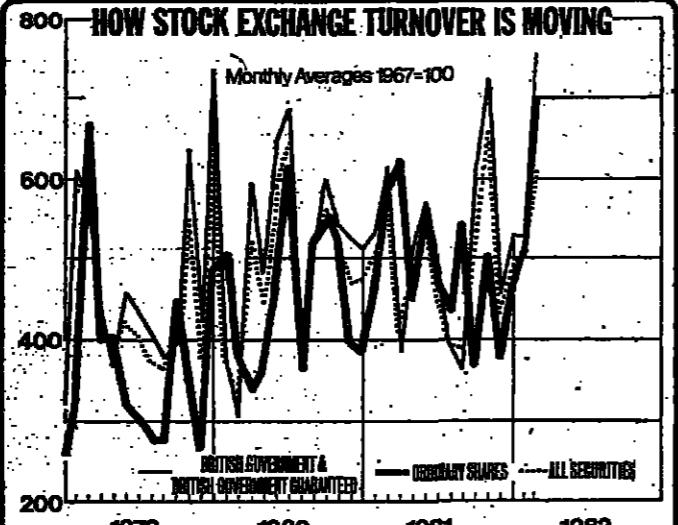
STRONG HOPES of lower interest rates, realised in the wake of the Chancellor's Budget on March 9, encouraged heavy institutional and public buying of gilt-edged securities last month and pushed turnover in the sector to record highs. Three more trading days in the month than in February contributed to the expansion.

Total business soared 37.5 per cent from February's £16.53bn to a peak of £22.73bn, and the Financial Times Turnover index for All Securities jumped from 506.6 to a record high of 606.4. The total number of bargains increased from 4,556,567 to 5,92,802.

Business in gilt-edged securities expanded dramatically, jumping by a remarkable 55.33bn, or nearly 42 per cent, to a record £17.89bn and surpassing the previous peak of £12.47bn recorded in January 1980. Business in longer-dated and irredeemable securities doubled with a 94.8 per cent gain from £4.94bn to £9.83bn, while trade in short-dated stocks improved by 8.6 per cent — from £7.15bn to £8.16bn.

The number of bargains done in British Funds rose in March by 18.54 to 99,954 with the main increase attributed to deals in the longer-dated and irredeemable. In contrast, deals in the shorts contracted last month, by 17.2 to 28,956. The Financial Times Turnover index for all British Government Securities peaked at 752.9, compared with February's 527.2.

The increased demand for gilts followed the March 9 Budget. The Government Securities index reflected the Chancellor's Budget measures and the further 3 point



cut in UK base lending rates by attaining a 1982 high point of 69.55 on March 23. Subsequently, it reacted on the reversal of the recent trend towards lower interest rates in the US. In the month a net 2.54 points up at 68.93.

Equity shares, somewhat overshadowed by gilt-edged, were resident in anticipation of Budget measures and falling interest rates. Sentiment was also given a boost by the marked slowdown in the annual rate of UK inflation.

Trade in ordinary shares rose from £2.54bn in February to £2.41bn; the number of bargains increased by 112,846 to 451,259, but the average value per bar gain fell by £34 to £7,557. The

The Laird Group

PUBLIC LIMITED COMPANY

Results 1981

	Year to 27 December 1981 £'000	Year to 28 December 1980 £'000
Turnover	272,200	194,037
Profit before Tax	16,346	13,570
Tax	(3,964)	(3,750)
Profit after Tax	12,382	9,820
Extraordinary items	—	(18,000)
Closure of Patent Shaft	(782)	(3,699)
Other items	(782)	(21,699)
	12,100	(11,878)
Release of provision made in 1979 for closure of Patent Shaft	—	18,000
Dividends	12,100	6,121
Transferred to Reserves	9,273	4,019
Earnings per Ordinary Stock Unit	19.0p	18.4p
Net dividend per Ordinary Stock Unit	4.0p	3.7p
Dividend cover	4.8	5.0
Net assets per Ordinary Stock Unit	117.8p	101.1p

1. A final dividend of 2p net is recommended, making a total for the year of 4p net (1980 3.7p).

2. Compensation for the nationalisation of the shareholding in Cammell Laird Shipbuilders was finally settled at £2.4 million, all of which has been received.

3. The tax charge includes overseas tax of £2.29 million (1980 £1.85 million).

4. The current cost profit after tax is £9.6 million and the current cost earnings per Ordinary Stock Unit are 14.2p.

Notes

كما من المهم

This advertisement complies with the requirements of The Council of The Stock Exchange.

It does not constitute an invitation to subscribe for or procure any securities.

NATOMAS

\$50,000,000

Natomas Overseas Finance N.V.

(incorporated under the laws of the Netherlands Antilles)

15% Notes Due April 22, 1985

With Warrants to Purchase

\$100,000,000

15 1/2% Debentures Due April 22, 1989

The Notes and Debentures will be Unconditionally Guaranteed by

Natomas Company

(incorporated under the laws of California, U.S.A.)

The following have agreed to purchase the Notes:

SWISS BANK CORPORATION INTERNATIONAL LIMITED

MORGAN GUARANTY LTD

SALOMON BROTHERS INTERNATIONAL

BANK OF TOKYO INTERNATIONAL LIMITED

BANQUE DE PARIS ET DES PAYS-BAS

DRESDNER BANK AKTIENGESELLSCHAFT

MANUFACTURERS HANOVER LIMITED

S. G. WARBURG & CO. LTD.

The Notes issued at 100 per cent, have been admitted to the Official List by the Council of The Stock Exchange subject only to the issue of the temporary global Note. The Debentures, to be issued at 100 per cent plus accrued interest from April 22, 1982 to the date of exercise of the Warrants, have also been admitted to the Official List by the Council of The Stock Exchange subject only to the issue of the temporary global Debenture. Interest on both Notes and Debentures is payable annually in arrears on April 22.

Particulars of the Notes, Warrants and Debentures

MONEY MARKETS

London rates ease

SHORT TERM interest rates declined in London last week, with seven-day interbank money finishing at 12.13 per cent, compared with 13.13 per cent on the previous Friday. Three-month funds fell to 12.13 per cent from 13.13 per cent.

Discount houses buying rates for one-month eligible bills fell to 13.1 per cent from 13.1 per cent, and for three-month bills to 12.12 per cent, from 12.12 per cent, despite a rise in Bank of England dealing rates for some band 2 and 3 bills.

Day-to-day credit was in short supply generally, but the authorities had difficulty forecasting the size of the deficit most days. This was because of problems estimating the amount of Exchequer transactions at the end of the tax year.

Conditions are expected to improve this week, although the total shortage of day-to-day credit is likely to exceed £1.5bn.

In New York federal funds rose above 17 per cent on make-up day Wednesday, and stayed firm at about 16 per cent before lunch on Friday. Money supply was expected to decline last week, but the likelihood of a bulge in April kept financial markets nervous.

In Frankfurt key lending rates were unchanged at the Bundesbank council meeting, in line with expectations. A securities repurchase agreement unwinds today, but this will be balanced by a further 30-day repurchase plan for tender days at 9 per cent, compared with 9.1 per cent previously.

In Paris call money fell to 17

per cent from 18 per cent, and ahead of payment on a state loan. The low level recorded earlier in the week reflected intervention by the Dutch authorities to support the weaker members of the European Monetary System.

In Amsterdam call money was volatile, falling to 14 per cent on Tuesday, but rising to about 7 per cent the following day.

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BY COLIN MILLHAM

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Monday April 5 1982



Tyre rivals close to pact on standard sizes

BY STUART MARSHALL, MOTORING CORRESPONDENT

PACT ON STANDARD Sizes DUNLOP and Michelin will announce soon that they have agreed proposals for a new international standard for millimetre diameter car tyres and wheel sizes. The proposals will be put before the European Tyre and Rim Technical Organisation (ETRTO) with a request that they be officially published as soon as possible.

The two companies, keen rivals in the tyre market, have been co-operating secretly for some months.

If the proposals win ETRTO's approval—and rejection is considered most unlikely—Dunlop and Michelin would increase

sales to the motor industry and gain royalty income from production licenses for other tyre and wheel manufacturers.

Dunlop and Michelin have both faced problems with their tyres. Dunlop's Denovo "run flat" safety tyre has met with little success since it was introduced in the mid-1970s. British Leyland, the only manufacturer to show any enthusiasm for it, has dropped Denovo as factory-fitted optional equipment on all its cars through lack of demand. Denovo could only go on a special size of rim that no other tyre would fit.

While the technological merit

of Michelin's high-performance TRX tyre has been widely recognised, it has suffered commercially for a similar reason. It, too, needed a special size of wheel with a unique rim shape.

In the seven years since it was introduced, French car makers have been Michelin's main customers for TRX though Ford has fitted it to some up-market models.

Both Dunlop and Michelin have been independently developing their own high-performance tyres which stay in place on the wheel after blowouts and allow the driver to carry on for a few miles.

Dunlop has been working with Porsche in Germany and Jaguar—in this case with Michelin's co-operation—in Britain. Michelin has been working with BMW, the latter a recent convert to the TRX tyre on certain of its models.

Much of the pressure to develop a wheel/tire package combining the advantages of TRX and Denovo has come from the European car industry which aims to eliminate the spare wheel to save weight and space, but without incurring extra cost or complication. At the same time, the car makers will not accept any reduction in tyre performance standards.

Fears over unbranded drugs use

By Sue Cameron, Chemicals Correspondent

HOECHST UK—part of the German-based chemicals conglomerate—has warned that the widespread replacement of brand-name drugs by cheaper generic ones "would eventually destroy the UK pharmaceutical industry."

The warning reflects growing fears among Britain's pharmaceutical companies that the Government may be considering new regulations that would make it easier to substitute generic—unbranded—drugs for higher-priced branded ones. The aim of such a move would be to cut the nation's drugs bill by as much as £50m a year.

Mr Brian Cromie, chairman of Hoechst UK's pharmaceutical division, is among those who have launched a strong attack on substitution.

"If substitution were allowed, doctors would no longer know what was being dispensed, patients would be confused, products would not have the legal and moral backing of a major manufacturer, drug recalls would be difficult or impossible and the UK pharmaceutical industry, which has made such a major contribution to medicine and to the country's economy, would gradually be lost," he said at the weekend.

The Association of the British Pharmaceutical Industry, which represents most of the major drug companies operating in the UK, has produced a pamphlet, *The Importance of Brand Names*, warning of the effect on the industry of generic drugs.

"Widespread generic prescribing or substitution would put some companies out of business and diminish permanently the prospect of discovery of new medicines for the still unconquered diseases."

It claims the increased use of generics would only cut Britain's annual drugs bill by some 3 per cent. And it says this saving would represent only some 50 per cent of the cost of developing a single new medicine. It also warns that the cheapest generic drugs would probably be made abroad.

The industry's anxiety stems from speculation about an official report that is now at the Department of Health. The report has just been completed by a working party, composed mainly of officials and representatives of the British Medical Association, set up last year to look into the effective prescribing of drugs.

It is generally believed to call for local pharmacists to be able to substitute generic drugs for branded ones unless a doctor insists otherwise by ticking a special box on the prescription form.

Drug companies fear that many doctors would not bother.

BP Oil's losses mount to £126m on current cost basis

By TERRY GARRETT

FULL CURRENT-COST losses from BP Oil Group, the oil-refining and marketing arm of British Petroleum in the UK and the Irish Republic, soared from £88m in 1980 to £126m last year.

The directors blame the deterioration in surplus capacity in the refining sector, in the UK and throughout Europe. They say there is little prospect of an upturn in demand.

When the parent company announced its 1981 results in mid-March, separate figures for the UK and the Irish Republic refining operations were not disclosed.

On a historic-cost basis BP Oil Group made profits of £23m, compared with £81m in 1980. This, however, is before taking

into account the much-increased costs of replacing oil sold.

This item alone wiped £109m (£91m in 1980) off historic-cost profits, producing a operating loss of £86m (£10m loss in 1980) before tax, interest and extraordinary items.

It is this £86m loss which the directors believe realistically reflects the group's performance.

The final quarter of 1981 showed some improvement over the previous three quarters. Historic profits amounted to about £7m in the closing three months while the operating loss, after the cost of sales adjustment, was under £4m.

The directors say, however, that margins are still depressed and show little sign of improvement to date, largely due to the

continuing competition generated by the excess of crude oil availability over demand. "As a result we are still operating at a loss against replacement costs."

"Physical sales of oil products fell by an eighth in 1981, to 15.84m tonnes. Apart from intense competition generated by overcapacity, BP Oil's directors blame the fall in sterling against the dollar and the non-availability of cheaper Saudi Arabian crude."

BP announced last year that its Kent refinery was to close in 1982. This will create a £5m exceptional debit in the 1981 accounts. The resulting economic, however, should improve performance by £50m a year from 1983.

TUC fight opens on Tebbit Bill

By JOHN LLOYD, LABOUR EDITOR

EXECUTIVE members from the TUC's 108 affiliated unions meet at Wembley today to begin the campaign which they hope will destroy the Government's Employment Bill.

Union leaders are aware that the outright opposition they have pledged carries a large element of risk, and have laid plans for a massive publicity campaign to rouse their members from their apparent aversion to militant action.

Only the 30,000-strong actors' union Equity, has disturbed the appearance of monolithic opposition to the Bill.

Equity's ruling council remains determined to apply for state funds for its union ballots. This is in spite of a 394 to 89 vote supporting an emergency motion condemning the move at its annual conference yesterday.

If Equity continues in its resolve to apply for state aid it will directly fight a TUC decision, binding on all affiliates, to use Government cash. The actors could then face suspension, or even dismissal from the TUC.

Senior civil servants from the Department of Employment will attend the TUC conference to report at first hand its mood and outcome to Mr Norman Tebbit, the Employment Secretary.

The union executives are expected to endorse an eight-point plan of opposition to the Employment Bill, including a refusal to participate in ballots on closed shops, support through industrial action for unions facing legal action by employers; withdrawal of union members from industrial

tribunals dealing with cases arising from the legislation; and a 10p per head levy to create a film "war fund".

Some disagreement on the uses to which the film fund is put is likely. Some unions want the money to be available to help pay unions' legal fees. But other, mainly left-led unions argue that this would turn the TUC into a collection agency for employers.

Mr Moss Evans, general secretary of the Transport and General Workers Union, the country's largest union, told a conference of trade union delegates at the weekend that "the fight is not one we can afford to lose, nor is it one we can dodge. The issue is quite clear—we are fighting for survival."

News analysis, Page 6

Bid to agree training strategy

By ALAN PIKE

EMPLOYERS AND union leaders will this week try to reach final agreement on proposals for providing all 16-year-old school leavers with a year-long programme of training, work experience and further education.

The Government intends to introduce the programme for unemployed 16-year-olds from September next year.

Unanimous agreement by both sides of industry on a Manpower Services Commission task group, which meets again on Thursday, is essential if there is to be any chance of Mr Norman Tebbit, Employment Secretary, being persuaded to extend the scheme into a system of train-

ing for all school leavers.

Union leaders and employers' representatives on the task group—together with educational and voluntary organisations—are agreed that training-for-all should be the goal.

There is also broad agreement that the Government's much-criticised proposed allowances on the new Youth Training Scheme—about £15 per week—are too low.

Possible alternative allowances of £25, £27.50 and £30 have been considered during the task group's discussions. The group believes that at least the £25 is the lowest of these could be met within the £1.1bn financial ceiling which the MSC set off their hands.

Continued from Page 1

Tory revolt

The failures of the last few weeks mean, on his view, that it is "only after killing a few of them and putting a Union Jack there" that the Tory Party will be in a mood to be magnanimous and start negotiations.

Widespread anger after Mr Nott's inept speech on Saturday was partly cooled at a private meeting of the back-bench foreign and defence committee where the Tory Party's tribal loyalties reassured themselves. The view of loyalty was that the Government should be given the benefit of the doubt for the time being and that Mr Nott and Lord Carrington should be given a chance to redeem themselves.

MPs with doubts about the practicability of military action fearing another fiasco like Suez have generally kept quiet, hoping that the mood will become less jingoistic with time.

Mr Ray Whitney, the MP for High Wycombe and a former diplomat with experience of the issue, was strongly attacked in the Commons from his own side when he stressed his own practical problems.

Continued from Page 1

Chandler to retain Neddy position

By JOHN ELLIOTT, INDUSTRIAL EDITOR
MR GEOFFREY CHANDLER is to be re-appointed director general of the National Economic Development Office for one year.

His first four-year term, in the £30,000-£35,000 a year job, expires in June. He is thought to have agreed with Sir Geoffrey Howe, the Chancellor, that he should be re-appointed for about a year to give both him and the Government time to consider longer-term arrangements.

An announcement is likely soon, possibly at the monthly meeting of the National Economic Development Council on Wednesday.

Mr Chandler, 59, joined the NED in 1978 after a long career in Shell, before which he had been a journalist on the Financial Times.

Strategy

At times it has been a controversial director—general making a series of speeches which have criticised the Government for not trying harder to achieve consensus for its policies.

He has also called for a more positive industrial strategy and for some form of incomes policy and at times has annoyed leaders of the CBI and TUC, as well as senior ministers and civil servants, with his carefully judged outspokenness.

But it would have been difficult for the Government to refuse to renew his contract without running the risk of which has blown up around the Manpower Services Commission, following the announcement two months ago that Sir Richard O'Brien, its chairman, was to be replaced.

In any case, Mr Chandler is thought to have run the NED well, providing good policy papers and other support services both for the council and for its 50 little Neddies and secretaries.

He is thought not to have been keen to take on a second full four-year term. A two-year appointment would have been a suitable compromise but is regarded by all those concerned as being potentially inconvenient because it could mean hunting for a replacement around the time of the next General Election if the government stays in power for approaching its full term of office.

So a re-appointment period of about a year emerged as the most likely solution and was being finalised just before the weekend.

THE LEX COLUMN

When companies can buy in

Public companies can start to think seriously now about the circumstances in which they might buy in their own shares. The Chancellor's Budget speech made clear that some of the tax obstacles preventing private, but not listed, companies from doing so would be removed.

However, one of the more obscure clauses of the Finance Bill now appears to suggest that a Bill has been opened up for listed companies wanting to do the same thing, albeit at a cost.

There is not going to be any revolution in corporate financial management, but at least it seems that the range of options open to companies is to be increased slightly.

The 1981 Companies Act makes it legal for the first time, broadly speaking, for UK companies to buy in their own shares. The relevant laws are expected to be enacted in the next few weeks. The financial attraction of buying in shares for a public company is that it allows surplus cash to be released to shareholders who can reinvest it in companies which actually need the capital. This kind of financial theory is not likely to cut much ice in many cash-rich company boards: they may be more impressed, however, by the prospect of reducing the discount to asset value at which their companies' share may be trading, a manoeuvre which such a

manoeuvre might achieve.

But as the legislation stands there is a heavy tax penalty involved. In a recent consultation paper the Inland Revenue spelt out the principle that whenever a continuing company distributed profits to shareholders, that distribution should be treated as an income tax on a small scale each year. Buying in of shares on a small scale each year may still be a capital one. In most instances, therefore, when a company buys in its own shares, the transaction will be treated in the same way as a dividend pay-out. Advance Corporation Tax will be paid.

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As public companies will be indifferent in tax terms as to whether they buy in shares or pay out extra dividends. But there is still a question-mark over how popular such capital shrinkage through own-share purchases will prove, especially as this route will tend to allow buying in of shares on a small scale each year. Buying out hostile holders of stock may still carry a tax penalty—since the normal offsets of exemptions and in future, the benefit of indexation. Sellers presumably would tend to have appropriate tax positions.

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